Literature Survey, Gravitational Wave References

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Gravitational Waves Basic References

- Jules Henri Poincaré (1905), C.R. Ac. Sci. Paris, 140, 1504 and also appears in *Oeuvres*, Volume 9, p. 489, Gauthier-Villars, Paris, 1954. (First mention of Gravitational Waves)
- Einstein, Albert (1915), <u>Einstein, Albert</u> (1915), "<u>Die Feldgleichungen der Gravitation</u>", *Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin*: 844–847, <u>http://nausikaa2.mpiwg-berlin.mpg.de/cgi-bin/toc/toc.x.cgi?dir=6E3MAXK4&step=thumb</u>, retrieved on 12 September 2006 (General Relativity)
- Einstein, Albert (1916), <u>Einstein, Albert</u> (1916), "<u>Die Grundlage der allgemeinen Relativitätstheorie</u>" (<u>PDF</u>), Annalen der Physik 49, <u>http://www.alberteinstein.info/gallery/gtext3.html</u>, retrieved on 3 September 2006 (Gravitational Waves)
- Einstein, Albert (1918), Über Gravitationswellen. In: Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften, Berlin (1918), 154–167. (Quadrupole equation and formalism)
- Albert Einstein and Nathan Rosen (1937), "On Gravitational Waves," *Journal of the Franklin Institute* **223**, 43-54.
- Galine Weinstein (2016), "Einstein and Gravitational Waves 1936-1938," https://arxiv.org/ftp/arxiv/papers/1602/1602.04674.pdf.
- Joseph Weber (1960), "Detection and generation of gravitational waves," *Physics Review*, Volume 117, Number 1, pp.306-313.
- John David Jackson (1962), Electrodynamics, John Wiley & Sons, New York.
- Joseph Weber (1964), "Gravitational Waves" in *Gravitation and Relativity*, Chapter 5, pp. 90-105, W. A. Benjamin, Inc., New York.
- Charles W. Misner, Kip Thorne, and John Archibald Wheeler (1973), *Gravitation*, W. H. Freeman and Company, New York.
- Lev Davidovich Landau and Evgenii M. Lifshitz (1975), *The Classical Theory of Fields*, Fourth Revised English Edition, Pergamon Press, pp. 348, 349, 355-357. <u>https://ia601209.us.archive.org/27/items/TheClassicalTheoryOfFields/LandauLifshitz-</u> <u>TheClassicalTheoryOfFields.andpdf..http://www.gravwave.com/docs/Annotated%20Chapt.%2013%20of%2</u> <u>0Landau%20&%20Lifshitz%204th%20Ed.pdf</u>
- S. W. Hawking and W. Israel (1979), *General Relativity: An Einstein Centenary Survey*, Cambridge University Press, Cambridge, p.98 (GW frequency bands and HFGWs defined as greater than 100 kHz)
- V. B. Braginsky and Valentin N. Rudenko and (1978), "Gravitational waves and the detection ofgravitational radiation," *Physics Report* (Review section of *Physics Letters*), **46**, Number 5, pp. 165-200.
- J. B. Griffiths (1991) Colliding Plane Waves in General Relativity, Oxford Mathematical Monographs, Clarendon Press, Oxford.

http://www.drrobertbaker.com/docs/European%20Lecture%202002%20Revised.pdf

Robert M. L. Baker, Jr. (2006), "Novel formulation of the quadrupole equation for potential stellar gravitational-wave power estimation," *Astronomische Nachrichten.* **327**, No. 7, pp. 710-713. http://dx.doi.org/10.1002/asna.200510617. Michele Maggiore (2007), Gravitational Waves, Volume 1: Theory and Experiments, Oxford University Press.

- A. Katti (2008), The Mathematical Theory of Special and General Relativity, CreateSpace Independent Publishing , North Charleston, South Carolina, USA,
- Robert M L Baker, Jr. (2009), "High-Frequency Gravitational Wave Communications Study (GravCom®)" TSC-TR-09-1, March , Special Report for Bigelow Aerospace Corporation. <u>http://www.gravwave.com/docs/com%20study%20composite%20.pdf</u>
- Carlos F. Sopuerta (2015), *Gravitational Wave Astrophysics*, 978-3-319-10487-4, Springer, pages. Assumes a background in general relativity and primarily aimed at graduate astrophysics students)
- M. Maggiore (2016), Gravitational Waves: Volume 1: Theory and Experiment, Oxford University Press. (Assumes a background in general relativity and primarily aimed at graduate physics students)
- Steven A. Balbus (2016), "Simplified derivation of the gravitational wave stress tensor from the linearized Einstein field equations" <u>arXiv.org</u> > <u>astro-ph</u> > arXiv:1604.05974v2, <u>https://arxiv.org/pdf/1604.05974.pdf</u>

Pierre Binétruy (2018), Gravity, The Quest for Gravitational Waves, Oxford.

For the Layperson

- Abraham Pais (1982), Subtle is the Lord ... The Science and the Life of Albert Einstein, Oxford UniversityPress, New York.
- Marcia Bartusiak, (2003), *Einstein's Unfinished Symphony : Listening to the Sounds of spacetime*, Joseph Henry Press. (Discusses the LIGO's search for gravitational wave detection and very few details of the science behind it or the recent LIGO detection.)

Harry Collins (2004), Gravity's Shadow, The University of Chicago Press, Chicago.

Alan Lightman (2004), Einstein's Dreams, Vintage, London.

- Daniel Kennefick (2007), Traveling at the Speed of Thought: Einstein and the Quest for GravitationalWaves, Princeton University Press.
- Gloria Garcia-Cuadrado (2009), "Towards a New Era in Gravitational Wave Detection: High Frequency Gravitational Wave Research," after peer review, accepted for publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 038), American Institute of Physics Conference Proceedings, Melville, NY **1103** pp. 553-563. Please visit Internet site:

http://www.gravwave.com/docs/Toward%20a%20New%20Era%20in%20Gravitational%20Wave%20Resear ch.pdf

Robert M L Baker, Jr., (2010), "Can I explain it?" presentation to the *Economic Round Table* concerning a layperson's explanation of the Li-Baker High-Frequency Gravitational Wave Detector, four-dimensional spacetime, gravitational waves, Schrödinger's Cat and other concepts, at *The California Club*, Los Angeles, January 28, please visit:

http://www.gravwave.com/docs/Layperson'%20s%20Discription%20of%20HFGWs%20Plus%20A.pdf.

- Harry Collins (2010), *Gravity's Ghost in the Twenty First Century*, University of Chicago Press. (Like a mystery story, but not much science. Also wrote "Gravity's Shadow")
- Janna Levin (2016), *Black Hole Blues and Other Songs from Outer Space*, Alfred Knopf Press. As Sheila Rowan states in her review of the Book (*Nature* **532**, p. 29) "As interesting as Levin's [historical] narrative is, it leaves an entire exciting book still to be written.")
- Robert M L Baker, Jr. (2017), Gravitational Waves: the World of Tomorrow, a Primer, with Exercises, Third Printing, Infinity Publishing, 234 pages, July 4, 2017, ISBN 978-4958-1181-4.
- Robert M L Baker, Jr. (2017), "In Search of the Invisible Wave: Brief History of High-Frequency Gravitational Wave

 Research," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at

 Southwest Jiaotong University, Chengdu, China.

 http://www.gravwave.com/docs/Search%20for%20Invisible%20Waves%20v5c.pdf

 m/docs/Search%20for%20Invisible%20Waves%20v5c.pdf
- Robert M L Baker, Jr. (2017), "Gravitational Waves & Exoplanets: New Frontiers in science", presented to the "Committee of 25", November 30, Palm Springs, California, USA.
- Robert M L Baker, Jr. (2017), two lectures, which Robert Baker presented at the Main Astronomical Observatory of the National Academy of Sciences of Ukraine on April 17, 2017, "High-Frequency Gravitational Wave Research and Application to Exoplanet Studies," *Space Science and Technology Journal*, Volume 23, No 3, p, 47-63. doi: https://doi.org/ UDC 530.12:531.51
 <u>file:///C:/Users/Robert/Desktop/1ADesktop/Space%20Science&Tech%20%20J/Space%20Science%20and%2</u> <u>OTechnology%20-2017-.pdf</u>

Julian Barbour (2009),"The Nature of Time," <u>arXiv:0903.3489v1</u> [gr-qc]

- Ya. S. Yatskiv 1, I. B. Vavilova (2017), "Some Little-Known Facts And Events From The History Of Gravitational Wave Research In Ukraine,", "Space Science and Technology Journal, Volume 23, No 3, p, 64-72. doi: https://doi.org/ UDC 530.12:531.51 (2017)
- Robert M L Baker, Jr. (2018) "Analyses of the Speed of Time Based on Muon Lifetime-Decay as a Transient Time," Presented to the Annual Meeting of the American Association for the Advancement of Science, February 18, Austin, Texas, USA.

Low Frequency (LF) GW from Orbiting Objects and Black Hole coalescence (mHz – kHz)

David Park (1955), "Radiation from a Spinning Rod," *Physical Review* **99**, No. 4, pp. 1325-1326.

- P. C. Peters and J. Mathews (1963), "Gravitational Radiation from Point Masses in a Keplerian Orbit," *Physical Review*, **131**, pp. 435-440.
- Mikhail E. Gertsenshtein and Vladislav I Pustovoit, (1963), "On the detection of low frequency gravitational waves," Soviet Physics JTEP 16, pp. 433-435.
- L. D. Landau and E. M. Lifshitz (1975) *The Classical Theory of Fields*, Fourth Revised English Edition, Pergamon Press , Section 110, 355-357.

https://ia601209.us.archive.org/27/items/TheClassicalTheoryOfFields/LandauLifshitz-TheClassicalTheoryOfFields.andpdf..http://www.gravwave.com/docs/Annotated%20Chapt.%2013%20of%2 0Landau%20&%20Lifshitz%204th%20Ed.pdf

- R. A. Hulse and J. H. Taylor and (1975)," Discovery of a pulsar in a binary system," Astrophysical J. 195, L51.
- L. W. Esposito and E. R. Harrison (1975), "Properties of the Hulse-Taylor binary pulsar system," Astrophys. J. 196, L1-L2.
- R. V. Wagoner (1975), "Test for the existence of gravitational radiation," Astrophys. J. 196, L63-L65.

- P. D. D'Eath (1978), "Gravitational Radiation from Hyperbolic Encounters", in *Sources of Gravitational Radiation*, Edited by Larry Smarr, pp. 293-309.
- J. H. Taylor and J. M. Weisberg (1982), "A new test of general relativity gravitational radiation and the binary pulsar PSR 1913-16," Astrophys. J. **253**, 908-920.
- Alex Abramovici, William E. Althouse, Ronald W. P. Drever, Yekta Gursel, Seiji Kawamura, Frederick J. Raab, David Shoemaker, Lisa Sievers, Robert E. Spero, Kip S. Thorne, Rochus E. Vogt, Rainer Weiss, Stanley E. Whitcomb and Michael E. Zucker (1992), "LIGO: The Laser Interferometer Gravitational-Wave Observatory.," *Science* 256,pp. 325-333. <u>http://dx.doi.org/10.1126/science.256.5055.325</u>
- R. A. Hulse (1994), "The Discovery of the Binary Pulsar," Reviews of Modern Physics 66, No. 3, July, pp. 699-710.
- J. H., Jr. Taylor (1994), "Binary pulsar and relativistic gravity," Reviews of Modern Physics 66, No. 3, July, 711-719.
- Kip S. Thorne (1995), "Gravitational Waves," arXiv:gr-qc/9506086v1
- Éanna É. Flanagan and Scott A. Hughes (1998), "Measuring gravitational waves from binary black hole coalescences. I. Signal to noise for inspiral, merger, and ringdown," *Physical Review D*, **57**, Number 8, pp. 4535-4565.
- S. F. Ashby, Ian Foster, James M. Lattimer, Norman, Manish Parashar, Paul Saylor, Schutz, Edward Seidel, Wai-Mo Suen, F. D. Swesty, and Clifford M. Will (2000), "A Multipurpose Code for 3-DRelativistic Astrophysics and Gravitational Wave Astronomy: Application to Coalescing NeutronStar Binaries," *Final Report for NASA CAN NCCS5-153*, October 15, 30 pages.
- Michele Vallisneri (2000), "Prospects for Gravitational-Wave Observations of Neutron-Star TidalDisruption in Neutron-Star-Black-Hole Binaries", *Phys. Rev. Lrs*, **84**, No.16, pp. 3519-3522.
- J. Baker, M. Campanelli, C. O. Lousto, and R. Takahashi (2002), "Modeling gravitational radiation from `coalescing binary black holes," *arXiv: astro-ph/0202469 v1*, February 25.
- L. P. Grishchuk (2003), "Update on Gravitational-Wave Research, "<u>arXiv:gr-qc/0305051v2</u>, November 4.
- V. Kaloger, C. Kim, D.R. Lorimer, M. Burgay, N. D'Armico, A. Possenti, R. N. Manchester, G. A. Lyne B.C. Joshk, M.A. McLaughlin, M. Kramer, J.M. Sarkissian, and F. Camilo (2004), "Erratum: 'The Cosmic Coalescence Rates for Double Neutron Star Binaries,' " Astrophysical Journal, probability of LIGO detecting binaries.)
- P. S. Shawhan (2004), "Gravitational Waves and the Effort to Detect them," *American Scientist* 92, 4, pp. 350- 356. (Explains why LIGO cannot detect HFGWs.) <u>http://dx.doi.org/10.4236/jmp.2011.26060</u>.
- L, .Bezrukov, S. Popov, V. Rudenko, A. Serdobolskii and M. Skvortsov (2004), "Gravitational wave experiments and Baksan project 'OGRAN'" arXiv:gr-qc/0411083v1 16 Nov 2004
- M. Rakhaman (2005), "LIGO" Physics Review D. 71, 082003.
- J. M. Weisberg and J. H. Taylor, (2005), "The Relativistic Binary Pulsar B 1913+16: Thirty years of observations and analysis", in F. Rasio and L. H. Stairs, ed., Astronomical Society of the Pacific Conference Series 328 [Aspen, Colorado, July 2005].

Tomas Bulik (2006), "High Frequency Gravitational Wave Sources," ACTA Physica Polonica B 37, No. 4,

p. 1357.

Tony Rothman and Stephen Boughn (2006), "Can Gravitons be Detected?," Foundations of Physics,

36, No. 12, December, pp. 1801-1825. (LIGO unlikely to detect gravitons.)

- B. Abbott, et al. (2007). "Searching for a Stochastic Background of Gravitational Waves with the Laser Interferometer Gravitational Wave Observatory," *The Astrophysical Journal* **659**, :918-930, April 20.
- Keisuke Goda (2007), "Development of Techniques for Quantum-Enhanced Laser-Interferometric Gravitational-Wave Detectors," Submitted to the Department of Physics in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the Massachusetts Institute of Technology, August.

M. J. Valtonen, H. J. Lehto, K. Nilsson, J. Heidt, L. O. Takalo, A. Sillanpää, C. Villforth, M. Kidger, G. Poyner, T. Pursimo, S. Zola, J.-H. Wu, X. Zhou, K. Sadakane, M. Drozdz D. Koziel, D. Marchev, W. Ogloza, C. Porowski, M. Siwak, G. Stachowski, M. Winiarski, V.-P. Hentunen, M. Nissinen, A. Liakos & S. Dogru (2008), "A massive binary black-hole system in OJ 287 and a test of general relativity," *Nature* 452, 851-853, April 17.

Lee Samuel Finn (2009), "Response of interferometric gravitational wave detectors," Physical Review D 79, 022002.

- Alexander Hentschel and Barry C. Sanders (2010), "Machine learning for precise quantum measurements," *Phys. Rev. Lett.* **104**, 063603.
- J. Adadie, et al. (2010), *Class. Quantum Gravity* **27**, 173001 (reports that detectable low-frequency GW events occur only once every 10,000 years per galaxy.)
- Bernard F. Schutz (2011), "Network of gravitational wave detectors and their figures of merit," *Class. and Quantum Grav.* 28, pp. 1 to 31.
- J. M. B. Downing, et al. (2011), "Compact binaries in star clusters II. Escapers and detection rates," Mon. Not. R. Astron. Soc., 416, pp. 133-147.
- The LIGO Scientific Collaboration (2011), "A gravitational wave observatory operating beyond the quantum shot-noise limit," *Nature Physics*, doi:10.1038/nphys2083; published on line at:http://www.nature.com/nphys/journal/vaop/ncurrent/full/nphys2083.html
- Ehud Nakar and Tavi Piran (2011), "Detectable radio flares following gravitational waves from mergers of binary neutron stars," *Nature* **478**, October 6, pp. 82-84.

Scott Ransom reported in Nicola Jones (2012), ""Tough Science," Nature 481, pp. 16-17.

A. Loinger and, T. Marsico (2012), "On the LIGO-VIRGO search of coalescing-binary signals," <u>arXiv:1205.3158v1</u> submitted on 13 May, 10 pages.

Kip S. Thorne (2012), "Classical Black Holes: The Nonlinear Dynamics of Curved Spacetime," Science 337, pp. 536-538.

- J. J. Hermes, Mukremin Kilic, Warren R. Brown, D. E. Winget, Carlos Allende Prieto, A. Gianninas, Anjum S. Mukadam, Antonio Cabrera-Lavers, Scott J. Kenyon (2012), "Rapid Orbital Decay in the 12.75-minute WD+WD Binary J0651+2844," arXiv:1208.5051, (Submitted on 24 Aug 2012).
- Sean Carroll (2012), "New Life for Gravitational Waves in Space?" http://blogs.discovermagazine.com/cosmicvariance/2012/09/11/new-life-for-gravitational-waves-in-space/
- Stefan Umbreit (2012), "Two Black holes found in a star cluster," *Nature* **490**, pp. 46-47. "... the rate of destruction of potential black-hole binaries would likewise increase, leading overall to fewer merger events."
- Lori Keesey (2012), "NASA pursues atom optics to detect the imperceptible," October 18, <u>http://phys.org/news/2012-</u> <u>10-nasa-pursues-atom-optics-imperceptible.html</u>
- Paul W. McNamara (2013), "The Lisa Pathfinder Mission," Int. J. Mod. Phys. D, 22, 1341001 [16 pages] DOI: 10.1142/S0218271813410010.
- An-Ming Wu and and Wei-Tou Ni (2013), "Deployment and Simulation of the Astrod-GW Formation," Int. J. Mod. Phys. D 22, 1341005 [16 pages] DOI: 10.1142/S0218271813410058.
- Yudhijit Bhattacharjee (2013), "Gravity-Wave Observatory Debates Fake-Data Tests," Science 339, p. 1260.
- Catia Grimani (2013), "Implications of Galactic and Solar Particle Measurements On Board Interferometers for Gravitational Wave Detection in Space," Int. J. Mod. Phys. D 22, 1341006 [13 pages] DOI: 10.1142/S021827181341006X.
- C. S. Unnikrishnan (2013), "IndIGO and Ligo-India: Scope and Plans for Gravitational Wave Research and Precision Metrology in India, "*Int. J. Mod. Phys. D*, **22**, 1341010 [18 pages] DOI: 10.1142/S0218271813410101 (Based on a talk at the Fifth ASTROD Symposium, Raman Research Institute, Bangalore, July, 2012).
- Atish Kamble and David L. A. Kaplan (2013), "Electromagnetic Counterparts of Gravitational Wave Sources: Mergers of Compact Objects," *Int. J. Mod. Phys. D* 22, 1341011 [16 pages] DOI: 10.1142/S0218271813410113.

- Kent Yagi (2013), "Scientific Potential of DECIGO Pathfinder and Testing GW with Space-Borne Gravitational Wave Interferometers," Int. J. Mod. Phys. D, 22, 1341013 [84 pages] DOI: 10.1142/S0218271813410137.
- John Antoniadis, et al. (2013), "A Massive Pulsar in a Compact Relativistic Binary," *Science* **340**, p. 448. Full Article; <u>http://dx.doi.org/10.1126/science.1233232</u>. (...supports the use of GR-based templates for the detection of gravitational waves from merger events with advanced ground-based detectors.)
- Peter W. Graham, Jason M. Hogan, Mark A. Kasevich, and Surjeet Rajendran (2013), "New Method for Gravitational Wave Detection with Atomic Sensors," *Phys. Rev. Lett.* **110**, 171102.
- J. Bonnet, P. Yin, M. E. Ortiz, P. Subsoontorn and D. D. Endy, (2013), *Science* **340** p. 599, and J. Aasi et al., LIGO technical document P1200087, "Prospects for Localization of Gravitational Wave Transients by the Advanced LIGO and Advanced Virgo Observatories" https://dcc.ligo.org/LIGO-P1200087-v18/public
- Mansi K. Kasliwal (2013), "Seeing Gravitational Waves," *Science* **340**, pp.555-556. (Reports that low-frequency GW detectors such as advanced LIGO are sensitive to the coalescence of black-hole binaries that occur about every 10,000 years in an average galaxy and will be detecting such GWs by 2017.)
- J. Aasi, et al. (2013), "Enhanced sensitivity of the LIGO gravitational wave detector by using squeezed states of light," Nature Photonics 7, 613–619.
- Amir H. Safavi-Naeini, et al. (2013), "Squeezed light from a silicon micromechanical resonator," *Nature* **500**, pp. 185-189. Could be utilized for better sensitivity in gravitational-wave detectors.
- Elizabeth Gibney (2013), "X-rays top space agenda," *Nature* **503**, 13-14. eLISA (evolved Laser Interferometer Space Antenna) launch date of 2034 and the "pathfinder mission" (to test the necessary technology) delayed until 2015.
- M. Shannon, et al. (2013), "Gravitational-Wave Limits from Pulsar Timing Constrain Supermassive Black Hole Evolution," Science 342, pp. 334 – 337. "... predictions for ... gravitational-wave background (GWB) from binary SMBHs in merging galaxies throughout the universe ... approximately a factor of 6 more stringent than previous limits."
- Pallava Bagla and Adrian Cho (2014), "India Poised to Join Hunt for Gravitational Waves," *Science* **343**, p. 717 "... LIGO-India comes on perhaps in 2020, ..."
- Sydney Schreppler, et al. (2014), "Optically measuring force near the standard quantum limit," *Science* 344, 6191, pp. 1486 1489 "... gravitational radiation ... prompted investigation of the detection limits imposed by the quantum mechanical properties of the sensors ... table-top force measurement systems ..."
- Mukremin Kilic, Warren R. Brown, A. Gianninas, J. J. Hermes, Carlos Allende Prieto and S. J. Kenyon(2014), "A New Gravitational Wave Verification Source," http://arxiv.org/abs/1406.3346. Taylor (2014), "A tight duo in a trio of black holes," *Nature* 511, pp. 35- 36. Looking for supermassive black-hole pairs whose coalescence would lead to powerful gravitational waves.
- R. P. Deane, et al. (2014), "A close-pair binary in a distant supermassive black hole system," Nature 511, pp. 57-60.
- Alexandria Witze (2014), "Wave of the Future," *Nature* 511, pp. 278-281. Corey S. Powell (2015), "What to Expect In 2015: General Relativity Gets Put to the Test Experiments Could Lead To A "Theory Of Everything' " *Popular Science*, January 2015 Issue
- Chris Van Den Broeck (2014)," A directed search for gravitational waves from Scorpius X-1 with initial LIGO," The LIGO Scientific Collaboration, the Virgo Collaboration, J. Aasi, B. P. Abbott, R. Abbott. (2014), "Searches for continuous gravitational waves from nine young supernova remnants "
- Sebastiano Bernuzzi, Alessandro Nagar, Tim Dietrich, and Thibault Damour, (2015), "Modeling the Dynamics of Tidally Interacting Binary Neutron Stars up to the Merger," *Phys. Rev. Lett.* **114**, 161103.

Matthew Evans et al. (2015), "Observation of Parametric Instability in Advanced LIGO," Phys. Rev. Lett. 114, 161102.

- Z. Arzoumanian, et al. (2015), "The NANOGrav Nine-year Data Set: Observations, Arrival Time Measurements, and Analysis of 37 Millisecond Pulsars," *Astrophys. Journ.* **813**, 65.
- D. Blair , L. Ju , C. N.Zhao, et al. (2015)," The next detectors for gravitational wave astronomy," *Sci China-Phys Mech Astron*, **58**: 120405, doi: 10.1007/s11433-015-5747-7
- B. P. Abbott, et al. (2016), "Observation of Gravitational Waves from a Binary Black Hole Merger," *Phys. Review Letters* 116, 061102-1 to -16. February 11. <u>http://dx.doi.org10.1103/PhysRevLett.116061102</u>
- B. P. Abbott, et al. (2016), "Astrophysical Implications of Binary Black Hole Merger," Astrophys. J. Ltrs., 818:1.22, February 12.

Daniel Clery (2016), "In search of spacetime megawaves," Science 351, pp. 1124-1125.

- Robert M L Baker, Jr. (2017), Gravitational Waves: the World of Tomorrow, a Primer, with Exercises, Third Printing, Infinity Publishing, 234 pages, July 4, 2017, ISBN 978-4958-1181-4.
- Gary V. Stephenson (2017), "Production of a Low Frequency Gravitational Wave (LFGW) via Heterodyned High Frequency Gravitational Waves (HFGWs)," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Shuangnan Zhang (2017), "The problem of Detecting Electromagnetic Waves from Merginjg Black Holes," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Di LI (2017), "The Prospect of Gravitational Wave Detection with FAST and PTAs,"," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- S. Singh[,] L. A. De Lorenzo, I. Pikovski and K. C. Schwab (2017), "Detecting continuous gravitational waves with superfluid ⁴He," *New Journal of Physics* **19**, IOP Publishing Ltd and Deutsche Physikalische Gesellschaft.
- Hsin-Yu Chen, Daniel E. Holz, John Miller, Matthew Evans, Salvatore Vitale, Jolien Creighton (2017), "Distance Measures In Gravitational-Wave Astrophysics And Cosmology," *arXiv:1709.08079v1.pdf*
- B. P. Abbott, et al. (2017), "Upper Limits on Gravitational Waves from Scorpius X-1 from a Model-based Crosscorrelation Search in Advanced LIGO Data," *The Astrophysical Journal*, 847:47, September 20 <u>https://doi.org/10.3847/1538-4357/aa86f0</u>.

RyanJ.Marshman, et al. (2018), "Mesoscopic Interference for Metric and Curvature (MIMAC) & Gravitational Waves,"

https://arxiv.org/pdf/1807.10830.pdf

Interaction of Electromagnetic and Gravitational Waves (HFGW: 100kHz – GHz)

- Oliver Heaviside (1893), *Electromagnetic Theory*, Vol 1, The Electrotechnician Printing and Publishing Company Limited, London; (1950) by Dover Publications, Inc., New York. (First mention that thered of gravity could be the same as the one of light or EM waves).
- M. E. Gertsenshtein (1962), "Wave resonance of light and gravitational waves," *Soviet Physics JETP*, Volume 14, Number 1, pp. 84-85.

J. Weber and G. Hinds (1962), "Interaction of Photons and Gravitons," Phys. Rev., Volume 128, pp. 2414- 2421.

G. A. Lupanov (1967), "A capacitor in the field of a gravitational wave," JETP 25, 1, p. 76.

SNewman, E. T. & Penrose, R. (1962), "An approach to gravitational radiation by a method of spin Coefficients," *J. Math. Phys.* **3**, 566–578. [4, 998]. (doi:10.1063/1.1724257)

Penrose, R. (1968), "Structure of space-time," In *Battelle rencontres* (ed. C. M. DeWitt & J. A Wheeler), pp. 121–235. New York: W. A. Benjamin.

Richard A. Issacson (1968), "Gravitational Radiation in the Limit of High Frequency," *Phys. Review* **166**, `1263-1272.

F. I. Cooperstock (1968), Ann. Phys. B47, p. 173. Scattering of GWs by EM waves.

U.Kh. Kopvillem and V.R.Nagibarov (1969), JETP Lett. v.2, (n12), 329.

- D. Boccaletti (1970), "Conversion of photons into gravitons and vice versa in a static electromagneticfield," Il Nuovo Cimento, 70 B n., p. 129.
- Y. B. Zel'dovich, (1973), Zh. Eksp Teor. Fiz., 65, p. 1311.
- D. Chester (1973), Phys. Rev. D. 7,2863. Scattering of GWs by EM waves.
- L. P. Grishchuk and M.V. Sazhin (1974), "Emission of Gravitational Waves by an Electromagnetic Cavity," Sov. Phy.JETP 38, No. 2, pp. 215-221.
- U. H., Gerlach (1974), Physics Review Letters 32, Number 18, p. 1023.
- Y. B. Zel'dovich, (1974),"Electromagnetic and gravitational waves in a stationary magnetic field," Soviet

Physics JETP 38, p. 652.

atsuo Tokuoka (1975), "Interaction of Electromagnetic and Gravitational Waves in the Weak and Short

Wave Limit," Progress of Theoretical Physics, Volume 54, Number 5, November, pp. 1309-1317.

- A. A. Sokolov and D.V.Galtsov (1976), Sov.Gr-VI Conf, abst. V.1 ,p4 ,Minsk .
- L. P. Grishchuk and A. G. Polnarev (1976), in *General Relativity and Gravitation*, **2**, ed. A. Held, Plenum Press. Scattering of GWs by EM waves.
- W. K. De Logi and A. R. Mickelson (1977), "Electrogravitational conversion cross sections in static

electromagnetic fields," Phys. Rev. D, Volume 16, pp. 2915-2927.

- V. I. Denisov (1978), Sov. Phys. JEPT 42. P.209. Scattering of GWs by EM waves.
- P. G. Macedo and A. G. Nelson (1982), Phys. Rev. D 28, p. 2382. Scattering of GWs by EM waves.
- J. B. Griffiths (1983), "Colliding plane gravitational and electromagnetic waves," *Journal Physics A: MathGen.*, Volume 16, pp. 1175-1180.

A. Michael Cruise (1983), "An Interaction between gravitational and electromagnetic waves", Monthly

Notices of the Royal Astronomical Society, Volume 204, pp. 485-482.

- P. G. Macedo and A. H. Nelson (1983), Physics Review D 82, p. 2382.
- Li, F. Y., Tang M. and Zhao P. (1992), "Interaction Between Narrow Wave Beam-Type High Frequency Gravitational Radiation and Electromagnetic Fields," *Acta Physica Sinica* **41**, pp. 1919-1928.
- P. Chen (1994), "Resonant Photon-Graviton Conversion in EM Fields: From Earth to Heaven," SLACPUB-6666, Stanford Univ., Stanford, CA.
- Y. E. Lyubarsky (1995) Physics of Pulsars, Harwood Academic Publishers, Amsterdam
- Fangyu Li and Meng-Xi Tang (1997), "Positive Definite Problem of Energy Density and Radiative Energy Flux for Pulse Cylindrical Gravitational wave," ACTA Physica Sinca 6, Number 5, 321-333.
- Paul R. Anderson and Dieter R. Brill (1997), "Gravitational Geons Revisited," arXiv:gr-qc/9610074v2 3 Sep 1997.
- G. Brodin and M. Marklund, (1999) *Physics Review Letters* 82, p. 3012.Discuss the parametric excitation of plasma waves in the presence of GWs.

- Fang-Yu Li, Meng-Xi Tang, Jun Luo, and Yi-Chuan Li (2000), "Electrodynamical response of a high energy photon flux to a gravitational wave," *Physical Review D*, Volume 62, July 21, pp. 044018-1 to 044018 -9.
- J. Moortgat, G't Hooft, and J. Kuijpers (2001), "Watching gravitational waves," arXiv:gr-qc/0104006 2 J. Moortgat and J. Kuijpers (2003), "Gravitational and Magnetosonic Waves in Gamma-ray Bursts," Astronomy & Astrophysics, p. 3292.
- Fang-Yu Li, Meng-Xi Tang, and Dong-Ping Shi (2003), "Electromagnetic response for High-FrequencyGravitational Waves in the GHz to THz band," paper HFGW-03-108, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- Fang-Yu Li and Nan Yang (2004), "Resonant interaction between a weak gravitational wave and amiowave beam in the double polarized states through a static magnetic field," *China PhysicsLetters* **21**, No. 11, p. 2113. April.
- D. Papadopoulos, N. Stergioulas, L. Vlahos and J. Kuijpers (2001), "Fast Magnetosonic Waves Driven by Gravitational Waves," Astronomy & Astrophysics **377**, pp. 701-706.
- Herman J. Mosquera Cuesta (2002), "Gravitational to electromagnetic waves conversion and gamma-ray bursts Calorimetry: The GRB980425ÕSN 1998bw ~10⁴⁹ erg radio emission," *Phys .Rev. D* **65**: 064009.
- H. David Froning, Jr. and Terence W. Barrett (2003), "Investigation of specially conditioned[R1][R2] electromagnetic fields for High-Frequency Gravitational Wave generation," paper HFGW-03-122, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.
- Behrooz Malekolkalami and Mehrdad Farhoudi (2006), "About Gravitomagnetism," arXiv:gr-qc/0610095v1
- Brian Bramson (2006), "Do electromagnetic waves harbor gravitational waves?" Proc. R. Soc. A (2006) 462, 1987– 2000 doi:10.1098/rspa.2006.1658 Published online 21 February 2006.
- Michele Maggiore (2007), *Gravitational Waves, Volume 1: Theory and Experiments,* Oxford University Press, pp. 250-263.
- F. Bastianelli, U. Nucamendi, C. Schubert and V. M. Villanueva (2008), "Photon–graviton mixing in an electromagnetic field," J. Phys. A: Math. Theor. 41, 164048 (9pp)
- Giorgio Fontana and Bernd Binder (2009), "Electromagnetic to Gravitational wave Conversion via Nuclear Holonomy," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 015)
- Christian Corda, Giorgio Fontana and Gloria Garcia Cuadrado (2009), "Gravitational Waves in the Hyperspace: a Critical Review," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum* (Gloria Garcia-Cuadrado (2009), "Towards a New Era in Gravitational Wave Detection: High Frequency Gravitational Wave Research," after peer review, accepted for publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum* (*SPESIF*), 24-27 February, Edited by Glen Robertson. (Paper 038), American Institute of Physics Conference Proceedings, Melville, NY **1103** pp. 553-563. . Please visit Internet site: <u>http://www.gravwave.com/docs/Toward%20a%20New%20Era%20in%20Gravitational%20Wave%20Resear</u> <u>ch.pdf</u>), 24-27 February, Edited by Glen Robertson. (Paper 027), American Institute of Physics Conference Proceedings, Melville, NY **1103**.
- A. Loinger, and T. Marsico (2012), "On the gravitational fields created by the electromagnetic waves," arXiv:1106.2210, 6 pages. Andrew Beckwith (2012), "Bounds upon Graviton mass, and making use of the difference between Graviton propagation speed and HFGW transit speed to observe post Newtonian corrections to Gravitational potential fields," 8 Chongqing University Department of Physics; Chongqing, PRC, 400044, E-mail: <u>abeckwith@uh.edu</u>, August 1.
- Andrew Beckwith (2012), "Can We Form Gravitinos by Something Other Than a Higgs Boson in the Electro-Weak Era?" Journal of Modern Physics **3**, pp. 1255-1260; doi:10.4236/jmp.2012.329162 Published Online September (http://www.SciRP.org/journal/jmp)

- Fangyu Li, Wen Hao and Fang Zhen-Yun (2013), "High-frequency gravitational waves having large spectral densities and their electromagnetic response," *Chin, Phys. B* **22**, No. 12, 120402.
- P. A. R. Ade, et al. BICE P2 Collaboration (2014), "BICE P2I: Detection of B-mode POLARIZATION AT DEGREE ANGULAR SCALES," <u>http://vixra.files.wordpress.com/2014/03/bicep2abstract.png</u>, March 17.
- Yuan-Hong Zhong, Jin Li, Yao Zhou, Qi-Lun Lei (2016), "Electromagnetic Resonance of Astigmatic Gaussian Beam to the High Frequency Gravitational Waves," *Chinese Physics Letters* **33**, No. 10, p. 100402.
- Fangyu Li, Hao Wen Zhenyun Fang, Lianfu Wei, Yiwen Wang and Miao Zhang (2016), "Quasi-B-mode generated by high-frequency gravitational waves and corresponding perturbative photon fluxes," *Nuclear Physics B* 911, 500-516.

Hao Wen (2017), "EM Signals from some possible sources of high-frequency gravitational waves,"

Li-Li Wang and Jin Li (2018), "The Effect of Inhomogeneous Background Magnetic Field on the Electromagnetic Response to High-Frequency Gravitational Waves, "ISSN 0202-2893, *Gravitation and Cosmology* **24**, No. 1, pp. 22–27. c Pleiades Publishing, Ltd.

Terrestrial or Laboratory Generation of HFGW (100 kHz – PHz)

- R. L. Forward and R. M. L. Baker, Jr. (1961), "Gravitational Gradients, Gravitational Waves and the 'Weber Bar'," Lecture given at the Lockheed Astrodynamics Research Center, 650 N. Sepulveda Bel Air, California, USA, November 16th. Lockheed Research Report RL 15210, based upon notes taken by Samuel Herrick a Lockheed Consultant (Forward coined the term "High-Frequency Gravitational Waves" and Baker suggested their use to monitor extraterrestrial intelligence communications) The lecture was based upon work with the Weber bar and gravity gradients: Joseph Weber (1960), "Detection and generation of gravitational waves," Physics Review, Volume 117, Number 1, pp.306-313. and W. B. Klemperer and Robert M L Baker, Jr., (1957). "Satellite Librations," Astronautica Acta 3, pp.16-27.
- M. E. Gertsenshtein (1962), "Wave resonance of light and gravitational waves," Soviet Physics JETP, ber 1, pp. 84-85.
- L. Halpren and B. Laurent (1964), "On the gravitational radiation of a microscopic system," *IL NUOVOCIMENTO*, Volume **XXXIIIR**, Number 3, pp. 728-751.
- U. Kh. Kopvillem and V. R. Nagibarov (1965), Inertial Echo and Coherent Gravitational Waves," JETP Pis'm 2, pp. 529-533.
- Robert L. Forward and L. R. Miller (1966), "Generation and detection of dynamic gravitational-gradient fields," *Hughes Research Laboratories Report* dated August 5, pp.512-518 and *Journ. of Appl. Phys.* **38**, 5489-5495 (1967).
- V. R. Nagibaraov and U. Kh. Kopvillem (1967), Feasibility of generating and receiving coherent gravitational waves by optically 'closed' systems, " *ZhETF Pis'ma* **5**, No. 12, pp.445-448.
- L. Halpren and B. Jouvet (1968), "On stimulated photon-graviton conversion by an electromagnetic field,"

Annale H. Poincaré, Volume VII, NA1, pp. 25ff.

Joseph Weber (1969), "Electromagnetic Coupled Detection of Dynamic Gravitational Force Gradients,"

United States Patent 3,722,288, filed January 31.

L, E. Halpern and R. Desbrandes (1969), "A model of the gravitational radiation of solids," Annales de L'I H. P A,11,3, pp.309-329.

- U. H. Kopvillem, V. R. Nagibarov and V. V. Samartsev (1973), "The macroscopic high-frequency quantum generator and detector of gravitational waves," *Phys, Letters* **42A**, No. 6, pp. 399-400.
- P. Grishchuk and M. V. Sazhin (1974), "Emission of gravitational waves by an electromagnetic cavity." Soviet Physics JETP, 38, Number 2, pp. 215-221.
- G. F. Chapline, J. Nuckolls, and L. L. Woods (1974), "Gravitational-radiation production using nuclear explosions," *Physical Review D.*, **10**, Number 4, August, pp. 1064-1065.
- V. A. Belokon (1975), "Compression of a perfect gas by multiply reflected shock waves," *Dokl. Akad SSSR 222*, N3; *JETP*, Pisma N18.pp. 343-345. (HFGW results by Braginsky and Rudenko.)
- L. P. Grishchuk and M. V. Sazhin (1975), "Excitation and detection of standing gravitational waves," *Moscow State* University, Zh. Eksp. Teor. Fiz. **68**, 1569-1582 (possible Tokamak HFGW generation)
- F. Sacchetti (1976), "High-frequency gravitational radiation by the normal modes of crystalline solids," *Il Nuovo Cimento* **35B**, 1, pp. 61-69.
- A. A. Sokolov and D. V. Galtsov (1976) Grats. Sov. Gr- IV Conference, Volume 1, Minsk, p. 4.
- T. Musha and M. Sekie (1976), "Induced emission of gravitational waves," *Letteral Nuovo Cimento* 16, No. 1, pp. 14-16.
- L. P. Grishchuk, "Gravitational waves in the cosmos and the laboratory," .Sov. Phys. Usp 20, 319 (1977).
- Valentin N. Rudenko and V. B. Braginsky (1978), "Gravitational waves and the detection of gravitational radiation," Section 7: "Generation of gravitational waves in the laboratory," *Physics Report* (Review section of *Physics Letters*), 46, Number 5, p. 165-200.
- F. Romero B and H. Dehnen (1981), "Generation of gravitational radiation in the laboratory," Z. Naturforsch, 36a, pp. 948-955. <u>http://dx.doi.org/10.1515/zna-1981-0905</u>. L
- L. H. Ford (1982), "Gravitational Radiation by Quantum Systems," Annals of Physics, 144, pp. 238-248.
- John D. Kraus (1991), "Will gravity-wave communication be possible?" *IEEE Antennas & Propagation Magazine*, **33**, Number 4, August.
- Pia Astone, et al (1991), "Evaluation and preliminary measurement of the interaction of dynamical gravitational near field with a cryogenic gravitational-wave antenna," *Zeischrift fuer Physik* **50**, pp. 21-29.
- S. F. Novaes.and D. Spehler (1993)., "Gravitational laser backscattering," Phys. Rev. D, 47, pp. 2432-2434.
- John Argyris and Corneliu Ciubotariu (1997) "A proposal of new gravitational experiments." *Modern Physics Letters*, **12**, Number 40, pp. 3105-3119.
- Giorgio Fontana (1998), "A possibility of emission of high frequency gravitational radiation from junctions between dwave and s-wave superconductors," *Preprint, Faculty of Science, University of Trento*, 38050 Povo (TN), Italy, pp. 1-8. <u>http://xxx.lanl.gov/html/cond-mat/9812070</u>.
- E.G. Bessonov (1998), "Grasers Based on Particle Accelerators and on lasers," arXiv:physics/9802037v2[physics.classph]
- Robert M L Baker, Jr. and Frederick W. Noble (1999), "Peak Power Energy Storage Device and Gravitational Wave Generator," *United States Patent 6,160,336*, filed November 19.
- Hendge, G. (2000). Written communication from the United States National Security Agency (NSA) to Robert M L Baker, Jr., dated January 19.

Robert M L Baker, Jr. (2000), "Gravitational Wave Generator," United States Patent Number 6,417,597, filed July 14.

Giorgio Fontana (2000), "Gravitational Radiation and its Application to Space Travel," paper CP 504, Space Technology and Applications International Forum, Jan 30 - Feb 3, 2000, edited by M. SEI Genk, American Institute of Physics. Internet reprint: http://www.arxiv.org/abs/physics/0110042

- Baker, R. M. L. Jr. (2000) ,"Preliminary Tests of Fundamental Concepts Associated with Gravitational Wave Spacecraft Propulsion," in proceedings of American Institute of Aeronautics and Astronautics: Space 2000 Conference and Exposition, edited by J. Albaugh, Long Beach, California, Paper Number 2000-5250, 2000.
- Robert M. L. Baker, Jr (2000), "Gravitational Wave Generator Utilizing Submicroscopic Energizable Elements," United States Patent Number 6,784,591, 100 claims, filed December 27.
- M. Portilla and R. Lapiedra (2001), "Generation of High Frequency Gravitational Waves," *Physical Review D*, Volume 63, pp. 044014-1 to 044014-7. Raymond Y. Chiao (2002), "Superconductors as transducers and antennas for gravitational and electromagnetic radiation," *arXiv:gr-qc/0204012 v2*, April 11. (found analysis error)
- Robert M. L. Baker, Jr. (2002), "High-Frequency Gravitational Waves," Max Planck Institute for Astrophysics (MPA)
 Astrophysics (MPA)

 Lecture, May 9, Revised May 15, 2002. Please see Internet site at:
 http://www.drrobertbaker.com/docs/European%20Lecture%202002%20Revised.pdf
- Leonid P. Grishchuk (2003), "Electromagnetic generators and detectors of gravitational waves," paper HFGW-03-119, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.
- Heinz Dehnen and Fernando Romero-Borja (2003), "Generation of GHz THz High-Frequency
 Gravitational

 Waves in the laboratory," paper HFGW-03-102, Gravitational-Wave Conference,
 The MITRE

 Corporation, May 6-9. pp. 22 ff of
 http://www.gravwave.com/docs/Analysis%200f%20Lab%20HFGWs.pdf
- Giorgio Fontana and Robert M. L. Baker, Jr. (2003), "The high-temperature superconductor (HTSC) gravitational laser (GASER)," paper HFGW-03-107, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- M. Portilla (2003), "Generation of HFGW by irradiating a multidielectric film," paper HFGW-03-112 Gravitational-Wave Conference, The MITRE Corporation, May 6-9.
- Valentin N. Rudenko (2003), "Optimization of parameters of a coupled generator-receiver for a gravitational Hertz experiment," paper HFGW-03-113, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9. arXiv:gr-qc/0307105.
- Robert M. L. Baker, Jr. (2003), "Generation of High-Frequency Gravitational Waves (HFGW) by means of an array of micro- and nano-devices," paper HFGW-03-117, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- H. David Froning, Jr. and Terence W. Barrett (2003), "Investigation of specially conditioned electromagnetic fields for High-Frequency Gravitational Wave generation," paper HFGW-03-122 *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- Eric W. Davis (2003), "Laboratory generation of high-frequency gravitons via quantization of the coupled Maxwell-Einstein fields," paper HFGW-03-125, *Gravitational-Wave Conference*, The MITRE Corp.
- Raymond Chiao (2003), in "The Gravity Radio," *New Scientist,* November 8, pp.38-43 (Admits to errors in Chiao (2002)).
- G. S. Bisnovatyi-Kogan and V. N. Rudenko (2004), "Very high frequency gravitational wave background in the universe," *Class. Quantum Grav.* **21**, 3344-3359 (2004).
- Robert M L Baker, Jr. (2004), "High-Frequency Gravitational Waves: Challenges and Opportunities," Chongqing University, Gravitational Laboratory of Huazkong University of Science and Technology and Shanghai Institute of Optics and Fine Mechanics, P. R. China, November.
- V. N. Rudenko (2004), Grav. Cosmol. 10, p. 41.
- Robert M L Baker, Jr. (2006), "Novel formulation of the quadrupole equation for potential stellar gravitational-wave power estimation" *Astronomische Nachrichten / Astronomical Notes*, 327, No. 7, pp. 710-713. <u>http://www.gravwave.com/docs/Astronomische%20Nachrichten%202006.pdf</u>. http://dx.doi.org/10.1002/asna.200510617.

- N. I. Kolosnitsyn and Valentin Rudenko (2007), "Generation and Detection of the High Frequency Gravitational Radiation in a Strong Magnetic Field," in the proceedings of the *HFGW2 Workshop*, Institute of Advanced Studies at Austin (IASA), Texas, September 19-21 <u>http://earthtech.org/hfgw2/</u>.
- Robert M L Baker, Jr., Gary V. Stephenson and Fangyu Li (2007), "Analyses of the Frequency and Intensity of Laboratory Generated HFGWs," in the proceedings of the HFGW2 Workshop Institute of Advanced Studies at Austin (IASA), Texas, September 19-21, including comparative analysis of Dehnen and Romero-Borja (2003); http://earthtech.org/hfgw2/.
- Robert M L Baker, Jr. (2008), "Proposed Laboratory Generation of HFGWs," *Chongqing University*, P. R China, Lecture #2, April. Slides 48-72 of

http://www.drrobertbaker.com/presentations/ChineseLectures2008/index.html

- Robert M L Baker, Jr. (2008), "HFGW Overview 2008, PowerPoint Presentation," May. http://www.gravwave.com/presentations/HFGWOverview/index.html
- Marlan O. Scully and Anatoly A. Svidzinsky (2009), The Super of Superradiance," Science **325**, pp.1510-1511. (N² relationship).
- Robert M L Baker, Jr and Bonnie S. Baker (2011), "Gravitational Wave Generator," US Provisional Patent Number 61/575,076, filed August 14, 2011. Utility Patent Application Number 13461062, filed Electronically May 1, 2012.
- Andrew W. Beckwith (2013), "Tokamak-GW generator," Provisional Patent Number 61/963,272, filed November 29, 2013.
- C. Jeffrey Brinker and Paul G. Clem (2013)., "Quartz on Silicon," *Science* 340, no. 6134 pp. 818-819. http://dx.doi.org/10.1126/science.1236752
- Amjad Ashoorioon, Brandon Fung, Robert B. Mann, Marius Oltean M. M. Sheikh Jabbari (2014), "Gravitational Waves from Preheating in M-flation," arXiv:1312.2284 [hep-th].
- Andrew Walcott Beckwith (2015), "Review of Grishchuk and Sachin Gravitational Wave Generator via Tokamak Physics and its similarity to early universe GW from Braneworld Models", <u>http://vixra.org/abs/1502.0011</u>
- Andrew Walcott Beckwith (2015), "Reviewing Grishchuk GW Generator Via Tokamak Physics," Chongqing University department of physics Report. April 9. REVISED
- Johannes RoEnagel, et al. (2016), "A single atom heat engine," Science 352, pp.325-329.
- Matthas Ballauff (2016), "Self-assembly creates 2D materials," Science 352, pp. 656-657.
- Huibin Qui, et al. (2016), "Uniform patchy and hollow rectangular platelet micelles from crystallisable polymer blends," *Science* 352, 697-701.
- Robert M L Baker, Jr. (2017), Gravitational Waves: the World of Tomorrow, a Primer, with Exercises, Third Printing, Infinity Publishing, 234 pages, July 4, 2017, ISBN 978-4958-1181-4.
- Gary V. Stephenson (2017), "Production of a Low Frequency Gravitational Wave (LFGW) via Heterodyned High Frequency Gravitational Waves (HFGWs)," The 3rd High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- R. Y. Chiao, et al. (2017), "Dynamical Casimir Effect and the Possibility of Laser-Like Generation of Gravitational Radiation," *Journal of the British Interplanetary Society* **70**, pp.305-376.

Peer-Reviewed Proceedings Publications (Generation of HFGWs):

- I. M. Pinto and G. Rotoli (1988), "Laboratory generation of gravitational waves?" Proceedings of the 8th Italian Conference on General Relativity and Gravitational Physics, Cavlese (Trento), August 30 to September 3, World Scientific-Singapore, pp. 560-573.
- Robert M. L. Baker, Jr. (2004), "Precursor Experiments Regarding the Generation of High-Frequency Gravitational Waves (HFGW) by Means of Using an Array of Micro- and Nano-Devices," *Space* American Institute of Physics, Melville, New York, February 8-12, 699, Paper F02-2-179.
- Enrique Navarro, Miguel Portilla, and Jose Luis Valdes (2004), "Test of the generation of high-frequency gravitational waves by irradiating a multidielectric film," *Space Technology and Applications International Forum (STAIF-2004)*, edited by M. S. El-Genk, American Institute of Physics, Melville, New York, February 8-12, 2004, 699, Paper F02-1-141.
- Robert M. L. Baker, Jr. (2004), "Precursor Proof-of-Concept Experiments for Various Categories of High Frequency Gravitational Wave (HFGW) Generators," *Space Technology and Applications International Forum (STAIF-2004)*, edited by M. S. El-Genk, American Institute of Physics, 699, Paper F01-2-178.
- Giorgio Fontana, (2004), "Design of a Quantum Source of High-Frequency Gravitational Waves (HFGW) and Test Methodology," *Space Technology and Applications International Forum (STAIF-2004),* edited by M. S. El-Genk, American Institute of Physics, Melville, New York, February 8-12, **699**, Paper F02-1-143.
- Robert M. L. Baker, Jr., Eric W. Davis, and R. Clive Woods (2005), "Gravitational Wave (GW) Radiation Pattern at the Focus of a High-Frequency GW (HFGW) Generator and Aerospace Applications[R3]," in the proceedings of Space Technology and Applications International Forum (STAIF-2005), edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY**746**, 1315-1322 http://www.drrobertbaker.com/docs/AIP;%20HFGW%20Radiation%20Pattern.pdf
- Robert ML Baker, Jr. and Fang-Yu Li (2005), "High-Frequency Gravitational Wave (HFGW) Generation by Means of a Pair of Opposed X-ray Lasers and Detection by Means of Coupling Linearized GW to EM Fields," in the proceedings of *Space Technology and Applications International Forum* (STAIF-2005), edited by M.S.
 El[R4]-Genk, American Institute of Physics Conference Proceedings Melville, NY 746, 1271-1281
- R. Clive Woods and Robert M. L. Baker, Jr. (2005), "Gravitational Wave Generation and Detection Using Acoustic Resonators and Coupled Resonance Chambers," in the proceedings of *Space Technology and Applications International Forum (STAIF-2005)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY **746**, 1298.
- Robert M L Baker, Jr., (2005), "Applications of High-Frequency Gravitational Waves (HFGWs)," in the proceedings of Space Technology and Applications International Forum (STAIF-2005), edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY 746, 1306-1313.
- Robert M L Baker, Jr., Fangyu Li and Ruxin Li (2006), "Ultra-High-Intensity Lasers for Gravitational Wave Generation and Detection" in the proceedings of *Space Technology and Applications International Forum (STAIF-2006)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville NY **813**, pp.1249-1258. Available at: <u>http://www.drrobertbaker.com/docs/AIP;%20HFGW%20Laser%20Generator.pdf</u>
- Robert M L Baker, Jr., R. Clive Woods and Fangyu Li (2006), "Piezoelectric-Crystal-Resonator High-

Frequency Gravitational Wave Generation and Synchro-Resonance Detection," in the proceedings of *Space Technology and Applications International Forum (STAIF-2006)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville NY 813, pp. 1280-1289.

http://www.drrobertbaker.com/docs/AIP;%20HFGW%20Piezoelectric%20Generator.pdf

Giorgio Fontana and Robert M L Baker, Jr. (2006), "Generation of Gravitational Waves with Nuclear Reactions," in the proceedings of *Space Technology and Applications International Forum* (*STAIF-2006*), edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville NY **813**, pp. 1352-1358.

http://www.drrobertbaker.com/docs/AIP;%20HFGW%20Nuclear%20Generator.pdf

- R. M L Baker, Jr., G. V. Stephenson and F. Li (2008), "Analyses of the Frequency and Intensity of Laboratory Generated HFGWs," in the proceedings of *Space Technology and Applications International Forum (STAIF-2008)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY 969, pp. 1036-1044. http://www.gravwave.com/docs/Analysis%20of%20Lab%20HFGWs.pdf
- R. C. Woods and R. M L Baker, Jr. (2009), "Generalized Generators of Very-High-Frequency Gravitational Waves Including Ring/Cylinder Devices," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 001), American Institute of Physics Conference Proceedings, Melville, NY **1103.** pp. 515-523.
- R. M L Baker, Jr. and C. S. Black (2009), "Radiation Pattern for a Multiple-Element HFGW Generator," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. 3rd High-Frequency Gravitational Wave Workshop (Paper 035), American Institute of Physics Conference Proceedings, Melville, NY **1103.** pp. 582-590. Please see: <u>http://www.drrobertbaker.com/docs/Analyses%20of%20HFGW%20Generators%20and%20Radiation%20Pa</u> <u>ttern.pdf</u>
- R. M L Baker, Jr. (2009), "Input Power Requirements for High-Frequency Gravitational Wave Generators," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. 3rd High-Frequency Gravitational Wave Workshop (Paper 036), American Institute of Physics Conference Proceedings, Melville, NY **1103.** pp. 591-598. Please see <u>http://www.drrobertbaker.com/docs/HFGW's%20Power%20Requirements.pdf</u>
- Giorgio Fontana and Bernd Binder (2009), "Electromagnetic to Gravitational wave Conversion via Nuclear Holonomy," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 015), American Institute of Physics Conference Proceedings, Melville, NY **1103.** pp. 524-531.
- Kanibolotsky, K. (2010), 'The Nature of Gravitation and the Problem of the Laboratory Gravitational Waves Generation, "Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010), February 23-26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson. (Paper 008), American Institute of Physics Conference Proceedings, Melville. NY, USA 1208, pp. 523-437.
- Robert M L Baker, Jr and Bonnie S. Baker (2012), "Gravitational Wave Generator Apparatus," *The Space Technology & Applications International Forum (STAIF II 2012)*, March 13, Marriot Hotel, Albuquerque, New Mexico, USA. Publication can be viewed at:

http://www.gravwave.com/docs/Double%20Helix%20HFGW%20Gen.%20V5%20.pdf

- Andrew W. Beckwith (2014), "Review of Grishchuk and Sazhin Gravitational Wave Generator via Tokamak Physics," *Proceedings of 2nd International North Atlantic University Union (NAUN) Conference (MCSS'14)*, May 15-17, Gdansk, Poland.
- Andrew W. Beckwith (2014), "Variation in gravity due to laser," *Proceedings of 2nd International North Atlantic University Union (NAUN) Conference (MCSS'14)*, May 15-17, Gdansk, Poland.
- Andrew W. Beckwith and Robert M L Baker, Jr. (2015), "The Generation of Gravitational Waves by Lasers," Proceedings of the Space Technology & Applications International Forum (STAIF II 2015), April 16-18, 2015, Albuquerque, New Mexico, USA.

- Robert M. L. Baker, Jr. and Bonnie Sue Baker (2015), "Double-Helix, High-Frequency Gravitational Wave Generator Utilizing Nano Piezoelectric Crystals," 4th International Symposium on Energy Challenges (11th-13th August 2015), Session on Mechanics 07: Nanotechnology for generators, Aberdeen, Scotland. <u>http://www.gravwave.com/docs/Double%20Helix%20HFGW%20Gen.%20V7.pdf</u>
- N.I. Kolosnitsyn and Valentin Rudenko (2015), "Gravitational Hertz experiment with electromagnetic radiation in a strong magnetic field," *Phys. Scr.* **90**, 074059.
- Gary V. Stephenson (2017), "Production of Low Frequency Gravitational Wave via Heterodyne High Frequency Gravitational Waves (HFGWs)," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.

Dynamical Casimir effect and the possibility of laser-like generation of gravitational radiation

R.Y. Chiao,1 J.S. Sharping,2 L.A. Martinez, B.S. Kang, A. Castelli, N. Inan, and J.J. Thompson Dept. of physics, University of California at Merced 1rchiao@ucmerced.edu, <u>2isharping@ucmerced.edu</u> (2017)," Dynamical Casimir effect and the possibility of laser-like generation of gravitational radiation" arXiv:1712.08680v1 [gr-qc] 22 Dec2017.

High-Frequency Gravitational Wave (HFGW) Detectors

- R. L. Forward and R. M. L. Baker, Jr. (1961), "Gravitational Gradients, Gravitational Waves and the 'Weber Bar'," Lecture given at the Lockheed Astrodynamics Research Center, 650 N. SepulvedaBel Air, California, USA, November 16th. Lockheed Research Report RL 15210, based upon notes taken by Samuel Herrick a Lockheed Consultant and UCLA Professor (Forward coined the term "High-Frequency Gravitational Waves" and Baker suggested their use to monitor extraterrestrial intelligence communications) The lecture was based upon work with the Weber bar and gravity gradients: Joseph Weber (1960), "Detection and generation of gravitational waves," Physics Review, Volume 117, Number 1, pp.306-313. and W. B. Klemperer and Robert M L Baker, Jr., (1957). "Satellite Librations," Astronautica Acta 3, pp.16-27.
- R. L. Forward, D. Zipov, J. Weber, S. Smith and H. Benioff (1961), "Upper Limit for Interstellar Millicycle

Gravitational Radiation," Nature, Volume 189, p. 473.

M. E. Gertsenshtein (1962), "Wave resonance of light and gravitational waves," Soviet Physics JETP,

14, Number 1, pp. 84-85.

- U. Kh. Kopvillem and V. R. Nagibarov (1965), Inertial Echo and Coherent Gravitational Waves," JETP Pis'm 2, pp. 529-533.
- G. A. Lupanov (1967), "A capacitor in the field of a gravitational wave," JETP 25, 1, p. 76.
- Joseph Weber (1969), "Electromagnetic Coupled Detection of Dynamic Gravitational Force Gradients,"

United States Patent 3,722,288, filed January 31 (actually unrelated to gravitational waves).

- V. B. Braginsky and M. B. Mensky (1971), Zh. Exp. Teor. Fiz. 13, p. 585.
- L. Halpern (1972), Bull. Cl. Sci. Acad .roy. Belg. 58, p.647.
- V. B. Braginsky and M. B. Mensky (1972), Gen. Rel. Grav. 3, p.401.
- V. B. Braginsky, et al. (1973), Zh. Exp. Teor. Fiz. 65, p. 1729.
- U. H. Kopvillem, V. R. Nagibarov and V. V. Samartsev (1973), "The macroscopic high-frequency quantum generator and detector of gravitational waves," *Phys, Letters* **42A**, No. 6, pp. 399-400.
- Ya. B. Zeldovich (1973), Sov. Phys. JETP 65, p. 1311.
- V. B. Braginsky, L.P. Grishchuk, A. G. Doroshkevich, Ya. B. Zeldovich, I. D. Noviko and M. V. Sazhin

(1974), "Electromagnetic Detectors of Gravitational Waves," Sov. Phys. JETP 38, p. 865.

M. B. Mensky (1975), "On Gravitational-Electromagnetic Resonance," in Problems of the Theory of

Gravity and Elementary Particles, K. P. Stanyukovich (ed.), Issue 6, Moscow, Atomizdat (in

Russian), pp. 181-190.

- Ya. B. Zeldovich and I. D. Novikov (1975), "Structure and Evolution of the Universe," Moscow.
- L. P. Grishchuk and M. V. Sazhin (1975), "Excitation and detection of standing gravitational waves," *Moscow State* University, Zh. Eksp. Teor. Fiz. **68**, 1569-1582 (possible Tokamak HFGW generation)
- R. Baierlein (1976), Gen. Rel. Grav. 17, p. 583.
- V. B. Braginsky and Valentin N. Rudenko and (1978), "Gravitational waves and the detection of

gravitational radiation," Physics Report (Review section of Physics Letters), 46, Number

5, p. 165-200.

- F. Pegoraro, L. A. Radicati, Ph. Bernard and E. Picasso (1978), Phys. Rev. Letters A 68, p. 165.
- Valentin N. Rudenko and M. V. Sazhin (1980), "Laser interferometer as a gravitational wave detector,"

Sov. J. Quantum Electron 10, November, pp. 1366-1373.

- R. W. P. Drever, J. L. Hall and F. V. Kowalski, 1983, "Laser phase and frequency stabilization using an optical resonator," *Applied Physics* **B31**, p.97. http://dx,doi.org/10.1007/BF00702605
- Astone *et al* (1991), "Evaluation and Preliminary Measurement of Interaction of a Dynamical Gravitational Near Field with a Cryogenic G. W. Antenna," *Zeischrift fuer Physik C*, Volume 50, pp. 21-29.

Fangyu Li, Mengxi Tang and Pengfel Zhao, (1992), "Interaction between Narrow Wave Beam-type High

Frequency Gravitational Radiation and Electromagnetic Fields." ACTA Physica Sinica, Volume

41, Number 12, pp. 1919-1928.

M. E. Tobar and D. G. Blair (1993),"Parametric transducers for resonant bar gravitational wave antenna, J. Phys. D: Appl. Phys. 26, 2276-2291.

Melvin A. Lewis (1995), "Gravitational-Wave Versus Electromagnetic-Wave Antennas," IEEE Antennas

& Propagation Magazine, 37, Number 3, June.

D. G. Blair, et al. (1995), "High Sensitivity Gravitational-Wave Antenna with Parametric Transducer Readout," *Phys. Rev. Lett. 74, No. 11.*

Melvin A. Lewis (1995), "Sleuthing out Gravitational Waves," IEEE Spectrum, May, pp. 57-61.

Michael Tobar (1995), "Characterizing multi-mode resonant-mass gravitational wave detectors," Journal of

Applied Physics, 28,. pp. 1729-1736.

S. Frasca and M. A. Papa (1995), "Local Arrays of high-frequency arrays," First Edoardo Amaldi

Conference on Gravitational Wave Experiments, World Scientific Publishing Co., Singapore, pp.

443-448.

- Fangyu Li and Meng-Xi Tang (1997), "Positive Definite Problem of Energy Density and Radiative Energy Flux for Pulse Cylindrical Gravitational Wave," ACTA Physica Sinca 6, Number 5, 321-333.
- D. J. Ottaway, et al (1998), "A Compact Injection-Locked Nd:YAG Laser for Gravitational Wave

Detection," IEE Journal of Quantum Electronics, 34, Number 10, October.9.

C. Mehmel and B. Caron (1998), "Modeling and Control of a Gravitational Wave Detector, "IEEE

International Conference on Control Applications, Trieste, Italy, 1-4 September, pp. 736-740.

E.G. Bessonov (1998), "Grasers Based on Particle Accelerators and on lasers,"

arXiv:physics/9802037v2 [physics.class-ph]

M.E. Tobar (1999), "Microwave Parametric Transducers for the Next Generation of Resonant-Mass

Gravitational Wave Detectors," *Dept. of Physics, the University of Western Australia*, Nedlands, 6907 WA, Australia.

- Robert M L Baker, Jr. (2000), "Gravitational Wave Generator," United States Patent 6,417,597, filed July 14.
- Fang-Yu Li, Meng-Xi Tang, Jun Luo, and Yi-Chuan Li (2000) "Electrodynamical response of a highenergy

photon flux to a gravitational wave," Physical Review D, Volume 62, July 21, pp. 044018-

1 to 044018 -9.

A. M. Cruise (2000), "An electromagnetic detector for very-high-frequency gravitational waves," Class.

Quantum Gravity, 17, pp. 2525-2530. http://dx.doi.org/10.4236/jmp.2011.26060

- Robert M L Baker, Jr. (2001) Peoples Republic of China Patent Number 01814223.0, "Gravitational Wave Generator," filed July 13, 2001 granted September 19, 2007. Claims can be viewed at: <u>http://www.gravwave.com/docs/Chinese%20Detector%20Patent%2020081027.pdf</u>
- R. M. J. Ingley and A. M. Cruise (2001), "An electromagnetic detector for high frequency gravitational

waves," 4th Edoardo Amaldi Conference on Gravitational Waves, Perth, Australia, July.

Philippe Bernard, Gianluca Gemme, R. Parodi, and E. Picasso (2001), "A detector of small harmonic

displacements based on two coupled microwave cavities," Review of Scientific Instruments,

72, Number 5, May, pp. 2428-2437. http://dx.doi.org/10.1063/1.1366636

- Fang-Yu Li, and Meng-Xi Tang, (2002), "Electromagnetic Detection of High-Frequency Gravitational Waves" International Journal of Modern Physics D 11(7), 1049-1059.
- Robert M L Baker, Jr. (2002), "High-Frequency Gravitational Waves," Max Planck Institute for

Astrophysics (MPA) Lecture, May 9, Revised May 15, 2002. Please see Internet site at: http://www.drrobertbaker.com/docs/European%20Lecture%202002%20Revised.pdf.

 Fang-Yu Li, Meng-Xi Tang, and Dong-Ping Shi (2002), "Electromagnetic response of a Gaussian beam to high-frequency relic gravitational waves in quintessential inflationary models," Chongqing University Report, December 3, pp. 1-33.

Andrea Chincarini and Gianluca Gemme (2003), "Micro-wave based High-Frequency Gravitational Wave

detector," paper HFGW-03-103, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.

Gary V. Stephenson (2003), "Nanotube Gravitational Wave Generator," Patent Pending

- Fang-Yu Li, Meng-Xi Tang, and Dong-Ping Shi, (2003), "Electromagnetic response of a Gaussian beam to high-frequency relic gravitational waves in quintessential inflationary models," *Physical Review D* 67, pp. 104006-1 to -17.
- Leonid P. Grishchuk (2003), "Electromagnetic generators and detectors of gravitational waves," paper HFGW-03-119, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.

Fang-Yu Li, Meng-Xi Tang, and Dong-Ping Shi (2003), "Electromagnetic response for High-Frequency

Gravitational Waves in the GHz to THz band," paper HFGW-03-108, Gravitational-Wave

Conference, The MITRE Corporation, May 6-9.

Ning Li (2003), "Measurability of AC gravity fields," paper HFGW-03-106, Gravitational-Wave

Conference, The MITRE Corporation, May 6-9.

Valentin N. Rudenko (2003), "Optimization of parameters of a coupled generator-receiver for a

gravitational Hertz experiment," paper HFGW-03-113, Gravitational-Wave Conference, The

MITRE Corporation, May 6-9. arXiv:gr-qc/0307105.

Raymond Chiao (2003), in "The Gravity Radio," New Scientist, November 8, pp.38-43 (Admits to errors in

Chiao (2002)).

- L. P. Grishchuk (2003), "Update on Gravitational-Wave Research, <u>arXiv:gr-qc/0305051v2</u>, November 4.
- P. S. Shawhan (2004), "Gravitational Waves and the Effort to Detect them," American Scientist **92**, 4, pp.350-356 (Explains why LIGO cannot detect HFGWs).
- Lawrence, C. R. (2004), "QUIET, The Q/U Imaging Experiment, Measuring CMB Polarization with Massive Arrays of Coherent Detectors," C. R. Lawrence, JPL & the QUIET Collaboration, Zel'dovich-90, Space Research Institute, December 21.
- G. S. Bisnovatyi-Kogan and V. N. Rudenko (2004), "Very high frequency gravitational wave background

in the universe," Class. Quantum Grav. 21, 3344-3359.

Fangyu Li, and Nan Yang (2004), "Resonant Interaction between a Weak Gravitational Wave and a

Microwave Beam in the Double Polarized States Through a Static Magnetic Field"

Journal-ref:Chin. Phys. Lett., 21, No. 11, p. 2113.

- R. Ballantini, Ph. Bernard, S. Calatroni, E. Chiaveri, A. Chincarini, R. P. Croce, S. Cuneo, V. Galdi, G. Gemme, R. Losito, R. Parodi, E. Picasso, V. Pierro, I. M. Pinto, A. Podesta' and R. Vaccarone (2005), "Microwave apparatus for gravitational waves observation," INFN Technical Note INFN/TC-05/05, gr-qc/0502054.
- Richard M. J. Ingley, (2005), "Implementation and Cross Correlation of Two High Frequency Gravitational

Wave Detectors," PhD Thesis, The University of Birmingham, January.

A. M. Cruise and Richard M. J. Ingley (2005), "A correlation detector for very high frequency gravitational

waves," Class. Quantum Grav. 22, 5479-5481.

Zhi-Jun Lee and Zhen-Zhuian Wan (2006), "Noises in Detecting Relic Gravitational Waves," Chin.

Phys.Lett. 23, No. 12, pp. 3183- 3186.

- Yoon, K. W., Ade, P. A. R., Barkats, D., et al. (2006), "The Robinson Gravitational Wave Background Telescope (BICEP): a bolometric large angular scale CMB polarimeter," in Proceedings of the SPIE, 6275: Millimeter and Submillimeter Detectors and Instrumentation for Astronomy III, ed. J. Zmuidzinas, W. S. Holland, S. Withington, and W. D. Duncan, Bellingham, Washington, astro-ph/0606278
- D. I. Schuster_, 1 A. A. Houck_, J. A. Schreier, 1 A. Wallraff, J. M. Gambetta, A. Blais, L. Frunzio, 1 B.
 Johnson, M. H. Devoret, S. M. Girvin, and R. J. Schoelkopf (2006), "Resolving photon number states in a superconducting circuit," arXiv:cond-mat/0608693 v1, 30 August.

- Baker, R. M L, Jr., Woods, R. C. and Fangyu Li (2006), "Piezoelectric-Crystal-Resonator High-Frequency Gravitational Wave Generation and Synchro-Resonance Detection," after peer review published in the proceedings of Space Technology and Applications International Forum (STAIF-2006), edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville NY **813**, pp. 1280-1289. http://www.drrobertbaker.com/docs/AIP;%20HFGW%20Piezoelectric%20Generator.pdf
- Fangyu Li and Robert M. L. Baker, Jr. (2007), "Detection of High-Frequency Gravitational Waves by Superconductors," 6th International Conference on New Theories, Discoveries and Applications of Superconductors and Related Materials, Sydney, Australia, January 10; International Journal of Modern Physics B 21, Nos. 18-19, pp. 3274-3278.
- M. Cruise (2007), "Operational Performance of the Birmingham 100 MHz Detector and Upper Limits on the Stochastic Background," Amaldi 7 Gravitational Wave Conference, July 9, 2007, Sydney, Australia.
- L. Gottardi, A. de Waard, A. Usenko, and G. Frossati(2007), "Sensitivity of the spherical gravitational wave detector MiniGRAIL operating at 5 K.", 1 May 2007, "http://arxiv.org/pdf/0705.0122v1.pdf
- R. M L Baker, Jr., G. V. Stephenson and F. Li (2007), "Proposed Ultra-High Sensitivity High-Frequency Gravitational Wave Detector," Discussion-Focus Paper 1.2, 2nd HFGW International Workshop Institute for Advanced Studies at Austin (IASA), Texas, September 19-21;

http://www.gravwave.com/docs/Proposed%20Ultra-High%20Sensitivity%20HFGW%20Detector%2005-15-08.pd

- Giorgio Fontana (2007), "The High-Temperature Superconductor (HTSC) Gravitational Laser (GASER)," Discussion-Focus Paper 2.1, 2nd HFGW International Workshop, Institute for Advanced Studies at Austin (IASA), Texas, September 19-21; http://earthtech.org/hfgw2/.
- R. M L Baker, Jr., G. V. Stephenson and F. Li (2007), "Analyses of the Frequency and Intensity of Generated HFGWs," Discussion-Focus Paper 2.3, 2nd HFGW International Workshop Advanced Studies at Austin (IASA), Texas, September 19-21 and comparison with Romero-Borja, 2003; http://earthtech.org/hfgw2/.
- Raymond Y. Chiao (2007), "New Direction for gravity-wave physics via 'Milliken oil drops'", 6 April, <u>arXiv:gr-qc/0610146v6</u>
- R. M L Baker, Jr., R. Clive Woods and Fangyu Li (2007), "Piezoelectric-Crystal-Resonator High-

Frequency Gravitational Wave Generation and Synchro-Resonance Detection," Discussion-Focus

Paper 2.4, 2nd HFGW International Workshop, Institute for Advanced Studies at Austin (IASA),

Texas, September 19-21; http://earthtech.org/hfgw2/.

R. Clive Woods (2007), "Modified Design of Novel Variable-Focus Lens for VHFGW," Discussion-Focus

Paper 3.1, 2nd HFGW International Workshop, Institute for Advanced Studies at Austin (IASA),

Texas, September 19-21; http://www.gravwave.com/docs/AIP;%20HFGW%20Optics.pdf

L. P. Grishchuk (2007) "High-Frequency Relic Gravitational Waves, their Detection and New

Approaches," in the proceedings of the HFGW2 Workshop, Institute of Advanced Studies at

Austin (IASA), Texas, September 19-21;

http://www.gravwave.com/docs/Grishchuk%20%20HFGW%20Lect.pdf, Slide #6

Giorgio Fontana (2007), "The High-Temperature Superconductor (HTSC) Gravitational Laser (GASER),"

Discussion-Focus Paper 2.1, 2nd HFGW International Workshop, Institute for Advanced Studies at Austin (IASA), Texas, September 19-21; <u>http://earthtech.org/hfgw2/</u>

M. B. Mensky and Valentin Rudenko (2007) "High-Frequency Relic Gravitational Wave Detector on

Electromagnetic-Gravitational Resonance," in the proceedings of the *HFGW2 Workshop*, Institute of Advanced Studies at Austin (IASA), Texas, September 19-21; <u>http://earthtech.org/hfgw2/</u>.

N. I. Kolosnitsyn and Valentin Rudenko (2007) "Generation and Detection of the High-Frequency

Gravitational Radiation in a Strong Magnetic Field," in the proceedings of the HFGW2 Workshop,

Institute of Advanced Studies at Austin (IASA), Texas, September 19-21;

http://earthtech.org/hfgw2/.

Christian Corda (2007), "A solution of linearized Einstein field equations in vacuum used

for the detection of the stochastic background of gravitational waves," Astropart. Phys.

27, 539549.

Christian Corda (2007), "Tuning the Stochastic Background of Gravitational Waves Using

the WMAP Data," Mod . Phys. Lett. A, 22, No. 16, pp. 1167-1173.

Christian Corda (2007), "The Importance of the "magnetic" components of gravitational

waves in the response functions of interferometers," Intern. Journ. Mod. Phys. D, 16,

8, 1497-1517.

M. R. Mensky (2007), "On gravitational-electromagnetic resonance," lanl.arXiv.org > gr-qc >

arXiv:0712.3721v1.

- Christian Corda (2007), "Extension of the frequency range of interferometers for the 'magnetic' components of gravitational waves?," Intern. Journ. Mod. Phys. A , 22, 13, 2361-2381.
- Samtleben, D. (2007), "Measuring the Cosmic Microwave Background Radiation (CMBR) polarization with QUIET," *II. Nuovo Cimnt* (in Press)
- Robert M L Baker, Jr. (2008), "Proposed Ultra-High Sensitivity HFGW Detector," Chongqing University,

P. R. China, April., Lecture #2, slides 1-47 of http://www.drrobertbaker.com/presentations/HFGWDetector/index.html

- Atsushi Nishizawa, Seiji Kawamura, Tomotada Akutsu, Koji Arai, Kazuhiro Yamamoto, Daisuke Tatsumi, Erina Nishida, Masa-aki Sakagami, Takeshi Chiba, Ryuichi Takahashi, and Naoshi Sugiyama (2008), "Laserinterferometric detectors for gravitational wave backgrounds at 100 MHz: Detector design and sensitivity," Phys. Rev. D 77, Issue 2, 022002. http://dx.doi.org/PhysRevD.77.022002
- Mike Cruise (2008), "Very High Frequency Gravitational Waves," Gravitational Wave Advanced Detector Workshop (GWADW), Elba Conference, 17 May, slide presentation 132.

 https://indico.pi.infn.it/contributionDisplay.py?contribId=132&sessionId=13&confId=225
- Robert M L Baker, Jr. (2008), "HFGW Overview 2008, PowerPoint Presentation," May. http://www.gravwave.com/presentations/HFGWOverview/index.html
- Fangyu Li, Robert M L Baker, Jr., Zhenyun Fang, Gary V. Stephenson and Zhenya Chen (2008) (Li-Baker

Chinese HFGW Detector), "Perturbative Photon Fluxes Generated by High-FrequencyGravitationalWaves and Their Physical Effects," The European Physical Journal C. 56, pp. 407-423,http://www.drrobertbaker.com/docs/Li-Baker%206-22-08.pdf423,

Robert M L Baker, Jr. (2009), "The Li-Baker High-Frequency Gravitational Wave Detector PowerPoint Presentation" Space, Propulsion and Energy Sciences International Forum (SPESIF), 24-27 February, Edited by Glen Robertson. (Paper 145), Christian Corda (2009), "Interferometric Detection of Gravitational Waves: The Definitive

Test for General Relativity," International Journal of Modern Physics D 18, No. 14, pp. 2275–2282.

- Chunnong Zhao, et al. (2009), "Three-Mode Optoaccoustic Parametric Amplifier: A Tool for Macroscopic Quantum Experiments," Phys. Rev. Lett. 102, 243902. Doi: 10.1130/PhysRevLett102.243902
- Stephen J. Minter, Kirk Wegter-McNelly, Raymond, Y. Chiao (2009), "Do Mirrors for Gravitational Waves Exist?" arXiv.org, "http://arxiv.org/abs/0903.0661".
- M. B. Mensky and V. N. Rudenko (2009), "High-frequency gravitational wave detector with electromagneticgravitational resonance," *Gravitation and Cosmology* 15, No. 2, pp.167-170.
- F. Y. Li, N. Yang, Z. Fang, R. M L Baker, Jr., G. V. Stephenson and H. Wen, (2009), "Signal photon flux and background noise in a coupling electromagnetic detecting system for high-frequency gravitational waves," *Phys. Rev. D.* 80, 060413-1-14 available at: http://www.gravwave.com/docs/Li,%20et%20al.%20July%202009,%20HFGW%20Detector%20Phys.%20Rev
- Alexander Hentschel and Barry C. Sanders (2010), "Machine learning for precise quantum measurements," Phys. *Rev.* Lett. 104, 063603.
- Lawrence M. Krauss, Scott Dodelson and Stephen Meyer (2010), "Primordial Gravitational Waves and Cosmology," Science **328**, pp. 989-992.
- Robert M L Baker, Jr. (2010), "The Li-Baker High-Frequency Relic Gravitational Wave Detector," Lecture at the Sternberg Astronomical Institute, Moscow State University, August 12. <u>http://www.gravwave.com/docs/New%20008%20SPESIF%202011.ppt</u>

#256,1, The Li-Baker High-Frequency Relic Gravitational Wave Detector

- G. Hobbs et al. (2010), "The International Pulsar Timing Array project: using pulsars as a gravitational wave detector". Classical and Quantum Gravity, **27**:8.
- S. Weise, et al. (2010), "Optomechanical Induced Transparency," Science 330, 1520.
- Raymond Y. Chiao, Marvin L. Cohen and Anthony J. Leggett (2010), Visions of Discovery, Cambridge University Press, Chapter.16." New directions for gravitational wave physics via 'Millikan oil drops'"
- R. Clive Woods, Robert M L Baker, Jr., Fangyu Li, Gary V. Stephenson, Eric W. Davis and Andrew W. Beckwith (2011), "A new theoretical technique for the measurement of high-frequency relic gravitational waves," *Journ. Mod. Phys.* 2, No. 6, pp. 498-518. The Abstract is available at: <u>http://vixra.org/abs/1010.0062</u> and the manuscript is available at: <u>http://www.gravwave.com/docs/J.%20of%20Mod.%20Phys%202011.pdf</u>. http://dx.doi.org/10.4236/jmp.2011.26060.
- Jin Li, Kai Lin; Fangyu Li; Yuanhong Zhong (2011), "The signal photon flux, background photons and shot noise in electromagnetic response of high frequency relic gravitational waves," *General Relativity and Gravitation*.
 43, 80, 2209.
- Sean T. McWilliams, Jeremiah P. Ostriker, Frans Pretorius (2012), "The imminent detection of gravitational waves from massive black-hole binaries with pulsar timing arrays," <u>arXiv.org</u> > <u>astro-ph</u> > **arXiv:1211.4590**, (Submitted on 19 November).
- Takaaki Musha (2012), "Possibility to construct a gravitational wave detector by utilizing the electrogravitic property of dielectric materials," *Journal of Space Exploration*. Methhta Press, September 8.
- R. N. Manchester (2013), "Pulsar Searching And Timing," Int. J. Mod. Phys. D 22, 1341007 [16 pages] DOI: 10.1142/S0218271813410071.

- John Antoniadis, et al. (2013), "A Massive Pulsar in a Compact Relativistic Binary," *Science* **340**, p. 448. Full Article; <u>http://dx.doi.org/10.1126/science.1233232</u>. (...supports the use of GR-based templates for the detection of gravitational waves from merger events with advanced ground-based detectors.)
- Peter W. Graham, Jason M. Hogan, Mark A. Kasevich, and Surjeet Rajendran (2013), "New Method for Gravitational Wave Detection with Atomic Sensors," *Phys. Rev. Lett.* **110**, 171102.
- Asimina Arvanitaki, Andrew A. Geraci, (2013), "Detecting High-Frequency Gravitational Waves with Optically Levitated Sensors," *Physical Review Letters* 110 (7) DOI: <u>10.1103/PhysRevLett.110.071105</u>
- Amir H. Safavi-Naeini, et al. (2013), "Squeezed light from a silicon micromechanical resonator," *Nature* **500**, pp. 185-189. Could be utilized for better sensitivity in gravitational-wave detectors.
- Freeman Dyson (2013), "Is A Graviton Detectable?" International Journal of Modern Physics A

28, No. 25 (2013) 1330041 (14 pages)

- Yiqiu Ma, et al. (2014), "Narrowing the Filter-Cavity Bandwidth in Gravitational Wave Detectors via Optomechanical Interaction," *Phys. Rev. Lett.* 113, 151102.
- P. A. R. Ade, et al. BICE P2 Collaboration (2014), "BICE P2I: Detection of B-mode POLARIZATION AT DEGREE ANGULAR SCALES," <u>http://vixra.files.wordpress.com/2014/03/bicep2abstract.png</u>, March 17.
- Maxim Goryachev, Michael E. Tobar (2014), "Gravitational Wave Detection with High Frequency Phonon Trapping Acoustic Cavities," 1410.2334v1 [gr-qc] 9 Oct 2014. *Phys. Rev. D* 90, 102005. <u>http://dx.doi.org/10.121203/PhysRevD.90.102005</u>
- Maxim Goryachev, Michael E. Tobar (2014), "Tabletop experiment could detect gravitational waves," PHY.ORG, 28 November.
- D. Blair L., Ju,, C. N. Zhao, et al. (2015), "The next detectors for gravitational wave astronomy,". *Sci China-Phys Mech Astron.* 58: 120405, doi: 10.1007/s11433-015-5747-7. See section 6 for HFGW applications.
- Robert M L Baker, Jr. (2017), Gravitational Waves: the World of Tomorrow, a Primer, with Exercises, Third Printing, Infinity Publishing, 234 pages, July 4, 2017, ISBN 978-4958-1181-4.
- Fangyu Li (2017), "Detecting high frequency gravitational waves with extra polarization states," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Lili Wang (2017), "Test mergers of mini-black holes by high frequency gravitational wave detector," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.

Peer-Reviewed Proceedings Publications (HFGW Detectors):

Fangyu Li, Robert M L Baker, Jr.. and Zhenyun Fang, (2007), "Coupling of an Open Cavity to

Microwave Beam: A Possible New Scheme of Detecting High-Frequency Gravitational Waves," in the proceedings of *Space Technology and Applications International Forum (STAIF-2007)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY **880**, pp. 1139-1148.

R. M L Baker, Jr., G. V. Stephenson and F. Li (2008), "Proposed Ultra-High Sensitivity HFGW Detector," in the proceedings of *Space Technology and Applications International Forum (STAIF-2008)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY

969, pp. 1045-1054. <u>http://www.gravwave.com/docs/Proposed%20Ultra-</u> High%20Sensitivity%20HFGW%20Detector%2005-15-08.pdf.

- Gary V. Stephenson (2009), "Lessons for Energy Resonance HFGW Detector Designs Learned from Mass Resonance and Interferometric LFGW Detection Schemes," after Peer Review, accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 016), American Institute of Physics Conference Proceedings, Melville, NY 1103, pp. 532-541. <u>http://www.gravwave.com/docs/Detector%20Development.pdf</u>
- Andrew W. Beckwith (2009), "Relic High Frequency Gravitational waves from the Big Bang, and How to Detect them," after Peer Review, accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson, American Institute of Physics Conference Proceedings, Melville, NY **1103**, **p.** 571. <u>arXiv:0809.1454v1</u> [physics.gen-ph] (Paper 031)
- Gloria Garcia-Cuadrado (2009), "Towards a New Era in Gravitational Wave Detection: High Frequency Gravitational Wave Research," after Peer Review, accepted for Publication in the *Proceedings of the Space, Propulsion* and Energy Sciences International Forum (SPESIF), 24-27 February, Edited by Glen Robertson. (Paper 038), American Institute of Physics Conference Proceedings, Melville, NY **1103.** pp. 553-563. . Please visit Internet site:

http://www.gravwave.com/docs/Toward%20a%20New%20Era%20in%20Gravitational%20Wave%20Resear ch.pdf

Gary V. Stephenson (2009), "The Standard Quantum Limit for the Li-Baker HFGW Detector," after Peer Review, accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 023), American Institute of Physics Conference Proceedings, Melville, NY **1103**, 542-547.

http://www.gravwave.com/docs/HFGW%20Detector%20Sensitivity%20Limit.pdf

- R. Clive Woods (2010), "Testing the Li-Torr-Chiao conjecture: a novel HFGW detector?" Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010), February 23-26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson. (Paper 005), American Institute of Physics Conference Proceedings, Melville. NY, USA 1208.
- Andrew Beckwith (2010), "A comparison between the requirements of the Li-Baker detector (direct detection of HFGW) and the QUIET detector (CMBR) in terms of noise generation / control," *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010)*, February 23-26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson. (Paper 008), American Institute of Physics Conference Proceedings, Melville. NY, USA **1208**, pp. 477-485.
- R. Clive Woods (2011), "Estimate of diffraction from Gaussian Beam in Li-Baker HFGW detector," *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2011)*, University of Maryland, Edited by Glen Robertson. (Paper 001), <u>http://www.gravwave.com/docs/Woods%202010.pdf</u>
- R.M L Baker, Jr. (2011), "The Li-Baker High-Frequency Relic Gravitational Wave Detector," PowerPoint Slide Presentation in the Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2011, University of Maryland), Edited by Glen Robertson. (Paper 008) <u>http://www.gravwave.com/docs/New%20008%20SPESIF%202011.ppt</u>
- Robert M L Baker, Jr and Bonnie Sue Baker (2012), "Radiation Absorber," *The Space Technology & Applications International Forum (STAIF II 2012)*, March 13, Marriot Hotel, Albuquerque, New Mexico, USA.
- Takaaki Musha (2012), "Possibility to Construct a Gravitational Wave Detector by Utilizing the

Electrogravitic Property of Dielectric Materials," *The Space Technology & Applications International Forum (STAIF II 2012)*, March 13, Marriot Hotel, Albuquerque, New Mexico, USA.

- Chao Guang Huang, Z. Chang, Z.-C Zhao, Fangyu Li and N. Zhu (2017), "Some Problems of GW detection," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Fangyu Li (2017),"Detecting high-frequency gravitational waves with extra polarization states," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Wen Zhao (2017), "Determination of cosmic dark energy by Einstein Telescope (ET)", The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Robert M L Baker, Jr. (2017), "Search for the Invisible Wave: Brief History of Gravitational Wave Research," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Zebing Zhou (2017), "Inertial sensors and space gravitational wave detection," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Lian-Fu Wei (2017), "Weak –light detections to probe the electromagnetic responses of high frequency gravitational waves,"," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.

HFGW Applications

R. L. Forward and R. M. L. Baker, Jr. (1961), "Gravitational Gradients, Gravitational Waves and the

'Weber Bar'," Lecture given at the Lockheed Astrodynamics Research Center, 650 N. Sepulveda,

Bel Air, California, USA, November 16th. *Lockheed Research Report RL 15210*, based upon notes taken by Samuel Herrick a *Lockheed* Consultant (Forward coined the term "High-Frequency Gravitational Waves" and Baker suggested their use to monitor extraterrestrial intelligence communications) The lecture was based upon work with the Weber bar and gravity gradients: Joseph Weber (1960), "Detection and generation of gravitational waves," *Physics Review*, Volume 117, Number 1, pp.306-313. and W. B. Klemperer and Robert M L Baker, Jr., (1957). "Satellite Librations," *Astronautica Acta* 3, pp.16-27.

- Steven Weinberg (1972), *Gravitation and Cosmology: Principles and Applications of the General Theory of Relativity,* John Wiley and Sons (proof of the Landau and Lifshitz Assertion)
- D. Landau and E. M. Lifshitz (1975) reprinted 2013, *The Classical Theory of Fields*, Fourth Revised English Edition, Pergamon Press, p. 349. (Includes Landau & Lifshitz Assertion as to a change in gravity due to HFGWs) <u>https://ia601209.us.archive.org/27/items/TheClassicalTheoryOfFields/LandauLifshitz-</u> <u>TheClassicalTheoryOfFields.andpdf</u>..<u>http://www.gravwave.com/docs/Annotated%20Chapt.%2013%20of%2</u> <u>0Landau%20&%20Lifshitz%204th%20Ed.pdf</u>
- V. M. Lipunov (1986), "On the probability of contact with an extraterrestrial technological civilization," Astron. Zh.65, pp.433-435.
- G. Veneziano (1987), "Mutual focusing of graviton beams," *Modern Physics Letters A*, Volume 2, Number 11, pp. 899-903.
- Valeria Ferrari (1988), "Focusing process in the collision of gravitational plane waves," *Physical Review D*, Volume 37, Number 10,15, May, pp. 3061-3064.

- Kraus (1991), "Will Gravity-Wave Communication Be Possible?" *IEEE Antennas & Propagation Magazine*, Volume 33, Number 4, August.
- Ning Li and Douglas G. Torr (1992), "Gravitational effects on the magnetic attenuation of super

conductors", Physical Review B, 46, Number 9, p. 5491. (HFGW refraction)

Douglas G. Torr and Ning Li (1993), "Gravitoelectric-electric coupling via superconductivity," Found.

Phys. Letts. 6, 371-383.(HFGW refraction)

Mark Kowitt., (1994). "Gravitomagnetism and magnetic permeability in superconductors," Physical

Review B, 49, Number 1, pp. 704-708 (Challenges Li and Torr (1992)).

Melvin A. Lewis (1995), "Gravitational-Wave Versus Electromagnetic-Wave Antennas," IEEE Antennas

& Propagation Magazine, 37, Number 3, June (HFGW communication).

- Melvin A. Lewis (1995), "Gravitational-Wave Versus Electromagnetic-Wave Antennas," *IEEE Antennas & Propagation Magazine* **37**, Number 3, June.
- J. Argyris, et al (1997), "A Proposal of New Gravitational Experiments," *Modern Physics Letters*, Volume 12, Number 40, pp. 3105-3119.
- Edward G. Harris (1999), "Comments on 'Gravitoelectric-coupling via superconductivity' by Douglas G.

Torr and Ning Li," Foundations of Physics Letters, 12, Number 2, pp. 201-205

(Challenges Torr and Li (1993)).

Hideo Seki (2001), "Communication Method by Gravitational Waves of High Frequency," Japanese Patent

No. 2001077766A, March 23 (to communicate with stars and examine diseases within the human body).

Jiri Joseph Petlan (2001), "Communication System Using Gravitational Waves," United States Patent No.

6300614 B1, October.(resonant frequency set up between two identical masses).\,Transportation Sciences Corporation (2002). Please see Internet site: http://www.gov-world.com/ and enter

Vendor Supplied Key word/phrase: Gravitational Waves (HFGW communication and imaging).

Robert M L Baker, Jr. (2003), "Application of High-Frequency Gravitational Waves to imaging," paper

HFGW-03-120, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

Giorgio Fontana (2003), "Gravitational radiation applied to space travel," paper HFGW-03-111,

Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

Melvin A. Lewis (2003), "Gravitational waves for voice and data communication," paper HFGW-03-109, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

Paul A. Murad and Robert M. L. Baker, Jr. (2003), "Gravity with a spin: Angular momentum in a gravitational-wave field," paper HFGW-03-114, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

Gary V. Stephenson (2003), "The application of High-Frequency Gravitational Waves (HFGW) to communications," paper HFGW-03-104, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.

Robert M L Baker, Jr. and Paul A. Murad (2003), "Cosmology and the door to other dimensions and

universes," 39th AIAA/ASME/SAE/ASEE Propulsion Conference, Huntsville, Alabama, July 22

R. Clive Woods (2005), "Manipulation of gravitational waves for communications applications using superconductors," *Physics C* 433, pp. 101–107.

Lawrence S. Moy and Robert M. L. Baker, Jr. (2006), "Nano-mechanism HFGW delivery systems for

dermatological applications" in the proceedings of the *International Congress of Nanobiotechnology & Nanomedicine (NanoBio2006)*, June 19-21, San Francisco, California, USA. <u>http://www.drrobertbaker.com/docs/Moy-Baker-Electrolift%20</u>NanoBio%202006.pdf

R.C. Woods (2006), "Enhanced Gertsenshtein effect in type-II superconductors", *Physica C* 442 85-90 (featured as "Superconductor trap for gravitational waves" in "Research Highlights", Nature Physics (2006) 2,501).

R. Clive Woods (2007), "Exploitation of variable phase-shifter for very-high-frequency gravitational

waves," Physica C 453, 31-36.

- Michele Maggiore (2007), Gravitational Waves, Volume 1: Theory and Experiments, Oxford University Press, pp. 250-263.
- Robert M L Baker, Jr. (2008), "HFGW Overview 2008, PowerPoint Presentation," May. http://www.gravwave.com/presentations/HFGWOverview/index.html
- Douglas M. Eardley, et al. (2008) "High Frequency Gravitational Waves," JSR-08-506, October, the JASON defense science advisory panel and prepared for the Office of the Director of National Intelligence.
- Robert M L Baker, Jr. (2008), "Q&A JASON Report on High-Frequency Gravitational Waves," please visit: http://www.gravwave.com/docs/Q%20&%20A.pdf
- Fangyu Li (2009), "Response to adverse JASON Report on Li-Effect" http://www.gravwave.com/docs/Li%20response%20to%20JASON.pdf
- Robert M L Baker, Jr. (2009), "Military Applications of High-Frequency Gravitational Waves," a White Paper, September 11 <u>http://www.gravwave.com/docs/Abridged%20White%20PaperFINAL2.pdf</u>
- Stephen J. Minter, Kirk Wegter-McNelly, Raymond, Y. Chiao (2009), "Do Mirrors for Gravitational Waves Exist?" arXiv.org, "http://arxiv.org/abs/0903.0661".
- Robert M L Baker, Jr. (2009), "High-Frequency Gravitational Wave Communications Study (GravCom[®])" TSC-TR-09-1, March, Special Report for Bigelow Aerospace Corporation. Please visit:

http://www.gravwave.com/docs/com%20study%20composite.pdf

- Raymond Y. Chiao, Wegter-McNelly, K. and Minter, S. J., (2009), "Do Mirrors for Gravitational Waves Exist?" arXiv:0903.0661v1 [gr-qc], March 4.
- Minter, S. J., Kirk Wegter-McNelly, K. and Chiao, R. Y. (2009), "Do Mirrors for Gravitational Waves Exist?" <u>arXiv:0903.0661v5</u>, March 23. *Phys. Rev. Lett.* **114**, 161102.
- Robert M L Baker, Jr. (2010), "Utilization of High-Frequency Gravitational Waves for Aerospace System and Technology," Proceedings of the Seventh Annual AIAA Southern California Aerospace Systems and Technology (ASAT) Conference Santa Ana, California, May 1. Please see

http://www.drrobertbaker.com/docs/Aerospace%20HFGW%20Applications.pdf

Robert M L Baker, Jr. and Bonnie S. Baker (2012) "The Utilization of High-Frequency Gravitational Waves for Global Communications," *Journal of Systemics, Cybernetics and Informatics* **10**, No. 5.

- Robert M L Baker, Jr. and Bonnie S. Baker (2012), "High Frequency Gravitational Waves (Ondas Gravitacionales Alta Frecuencia)" presentation to the Ecuadorian Air Force (FAE) Aerospace Department, July 9, Quito, Ecuador, <u>http://www.drrobertbaker.com/docs/Ecuadorian%20Air%20Force%20-</u> %20Aerospace%20Development%20Departmentv3ppt.pdf.
- M. Cruz and R. Coontz (2013), "Alien Worlds Galore," .*Science* **340**, 565-581.http://dx.doi.org/10.1126/science.123470 6361/201116673.
- K. G. Arun and Archana Pai (2013), "Tests of General Relativity and Alternative Theories of Gravity Using Gravitational Wave Observations," Int. J. Mod. Phys. D 22, 1341012 [21 pages] DOI: 10.1142/S0218271813410125.

R. F. Service (2013), "The Cyborg Era Begins." *Science*, 340, 1162-1165.http://dx.doi.org/10.1126/science.340.6137.1162.

A. Brandeker (2014), "A Different Class of Planets," Science 518, 166, http://dx,doi,irg/:10,1038/518 166a

- Robert M L Baker, Jr. (2015), "Kepler –62e and –186f: Face the Alien," Cataclysmic Event of Our First Encounter with Intelligent Extraterrestrial Beings presentation to the Economic Round Table, The California Club, Los Angeles, California, January 15.
- Ronald Evans (2015), Greenglow & The Search for Gravity Control, Troubador Publishing Ltd., International, Padstow, Cornwall UK.
- Robert M L Baker, Jr. and Bonnie Sue Baker (2016), "Application of High-Frequency Gravitational Waves to the Cataclysmic Event of Our First Encounter with Intelligent Extraterrestrial Beings," Journal of Applied Mathematics and Physics, 2016, 4, 110-129. Published Online January 2016 in SciRes. http://www.scirp.org/journal/jamp. http://www.drrobertbaker.com/docs/JAMP%20v7-1720448%20.pdf
- R. Grey (2016), "Could we soon 'Speak' Telepathically," *Daily Mail*, htt://www.dailymail.eo.uk/sciencetech/article-33868/5.
- Elizabeth Pennisi (2016), "Tracking how humans evolve in real time," *Science* 352, Issue 6288, pp. 876-877 DOI: 10.1126/science.352.6288.876.
- Robert M L Baker, Jr. (2016), *Gravitational Waves: the World of Tomorrow, a Primer*, Infinity Publishing, 216 pages, ISBN 978-4958-1181-4.
- Ermanno F. Borra and Eric Trottier (2016), "Discovery of Peculiar Periodic Spectral Modulations in a Small Fraction of Solar-type Stars," <u>Publications of the Astronomical Society of the Pacific</u>, <u>Volume 128</u>, <u>Number 969</u>, October 16.
- Robert M L Baker, Jr. (2017), Gravitational Waves: the World of Tomorrow, a Primer, with Exercises, Third Printing, Infinity Publishing, 234 pages, July 4, 2017, ISBN 978-4958-1181-4.

Robert M L Baker, Jr. (2017), two lectures, which Robert Baker presented at the Main Astronomical Observatory of the National Academy of Sciences of Ukraine on April 17, 2017, "High-Frequency Gravitational Wave Research and Application to Exoplanet Studies," *Space Science and Technology Journal*, Volume **23**, No 3, p, 47-63. doi: https://doi.org/ UDC 530.12:531.51

file:///C:/Users/Robert/Desktop/1ADesktop/Space%20Science&Tech%20%20J/Space%20Science%20and%20 Technology%20-2017-.pdf

- Robert M L Baker, Jr. (2018) "Analyses of the Speed of Time Based on Muon Lifetime-Decay as a Transient Time," Presented to the Annual Meeting of the American Association for the Advancement of Science, February 18, Austin, Texas, USA.
- K. Pardo, M. Fishband, D. Holtz and D. N. Spergel, (2018), "Limits on the number of spacetime dimensions from GW170817," *Journal of Cosmology and Astrophysics.*
- O. V. Babourova, et al. (2018), "Structure of plane gravitational waves of nonmetricity in affine-metric space," *Classical and Quantum Gravity* DOI: 10.1088/1361-6382/aace79 communications

Peer-Reviewed Proceedings Publications (HFGW Applications):

- Robert M L Baker, Jr. (2004), "An Experimental Program for Assessing High-Frequency Gravitational Wave (HFGW) Optical Applications and the Precursor HFGW Telescope," *Space Technology and Applications International Forum (STAIF-2004),* edited by M. S. El-Genk, American Institute of Physics, Melville, New York, February 8-12, **699**, Paper F01-2-178.
- Robert M. L. Baker, Jr., (2005), "Applications of High-Frequency Gravitational Waves (HFGWs)," in the proceedings of *Space Technology and Applications International Forum (STAIF-2005)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY **746**, 1306.
- R. Clive Woods (2006a), "A Novel Variable-Focus Lens for HFGWs," in the proceedings of Space Technology and Applications International Forum (STAIF-2006), edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville NY 813, 1297-1304.
- R. Clive Woods (2006b), "High-Frequency Gravitational Wave Optics," in the proceedings of Space Technology and Applications International Forum (STAIF-2006), edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville NY 813, 1305-1312.
- Robert M.L. Baker, Jr.. (2007), "Surveillance Applications of High-Frequency Gravitational Waves," in the proceedings of *Space Technology and Applications International Forum (STAIF-2007)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY 880, pp. 1017-1026. http://www.gravwave.com/docs/AIP;%20HFGW%20Surviellance.pdf
- R. Clive Woods, (2007), "Modified Design of Novel Variable Focus Lens for VHFGW," in the proceedings of *Space Technology and Applications International Forum (STAIF-2007)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY 880, pp. 1011-1018. <u>http://dx.doi.org/10.1063/1.2437545</u>.
- Giorgio Fontana and Robert M. L. Baker, Jr. (2007), "HFGW-Induced Nuclear Fusion," in the proceedings of Space Technology and Applications International Forum (STAIF-2007), edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY 880, pp. 1156-1164. <u>http://www.gravwave.com/docs/AIP;%20HFGW%20Nuclear%20Fusion.pdf</u>
- Lawrence S. Moy and Robert M. L. Baker, Jr. (2007), "The Influence of High-Frequency Gravitational Waves upon Muscles," in the proceedings of *Space Technology and Applications International Forum (STAIF-2007)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY 880, pp. 1004-1012.
- Colby Harper and Gary Stephenson (2007), "The Value Estimation of an HFGW Frequency Time Standard for Telecommunications Network Optimization," in the proceedings of *Space Technology and Applications International Forum (STAIF-2007)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY **880**, pp. 1083-1091. http://www.gravwave.com/docs/AIP;%20HFGW%20Telecommunications.pdf.

and http://www.gravwave.com/ppt/HFGW%20Telecom_files/frame.htm

- Robert M L Baker, Jr. (2010), "Applications of High-Frequency Gravitational Waves to the Global War on Terror," after peer review accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010)*, February 23-26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson. (Paper 001), American Institute of Physics Conference Proceedings, Melville. NY, USA **1208**, pp.501-512. .
 http://www.gravwave.com/docs/War%20on%20Terror%20Applications.pdf
- R. Clive Woods (2010), "Testing the Li-Torr-Chiao conjecture: a novel HFGW detector?" *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010)*, February 23-26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson. (Paper 005), American Institute of Physics Conference Proceedings, Melville. NY, USA **1208**, pp. 467-476.
- Robert M L Baker, Jr. and Bonnie Sue Baker (2011), "The Utilization of High-Frequency Gravitational Waves for Global Communications," Technical Keynote Address at the Information and Communication Technologies and Applications ICTA 2011, held jointly with The 17th International Conference on Information Systems Analysis and Synthesis: ISAS 2011, November 29th December 2nd, 2011 Orlando, Florida, USA. PowerPoint presentation, peer reviews and manuscript available at: http://www.drobertbaker.com/keynote2011.html.
- Robert M L Baker, Jr., Jeremy Horne and Bonnie Sue Baker (2013), "Our Mind Looks at Us," *Proceedings of the Space Technology & Applications International Forum (STAIF II 2013)*, April 15-18, Albuquerque, New Mexico, USA. (Use of HFGW in the Search for Extraterrestrial Intelligence). <u>http://www.gravwave.com/docs/Our%20mind%20looks%20at%20us%20v6.pdf</u>
- Robert M L Baker, Jr. and Bonnie S. Baker (2015), "The Cataclysmic Event of Our First Encounter with Intelligent Extraterrestrial Beings," "Proceedings of the Space Technology & Applications International Forum (STAIF II 2015), April 16-18, 2015, Albuquerque, New Mexico, USA.
- Lili Wang (2017), "Test mergers of mini-black holes by high frequency gravitational wave detector, ," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Robert M L Baker, Jr. (2017), "Gravitational Waves & Exoplanets: New Frontiers in Science." 7-4-17.

HFGW Propulsion and Gravity Modification

- Robert L. Forward, R (1962), "Guidelines to Antigravity," *Proceedings of the Gravity Research Foundation*; pp. 166-170, submitted as an essay to the Gravity Research Foundation, September 12 (Second Award).
- J. D. Bekenstein, (1973), "Gravitational-Radiation Recoil and Runaway Black Holes," Astrophys. J. 183, pp. 657-664.

http://articles.adsabs.harvard.edu/full/1973ApJ...183..657B/0000657.000.html

L. D. Landau and E. M. Lifshitz (1975), The Classical Theory of Fields, Fourth Revised English Edition,

Pergamon Press, p. 349.

https://ia601209.us.archive.org/27/items/TheClassicalTheoryOfFields/LandauLifshitz-TheClassicalTheoryOfFields.andpdf..http://www.gravwave.com/docs/Annotated%20Chapt.%2013%20of%2 OLandau%20&%20Lifshitz%204th%20Ed.pdf

Demetrious Christodoulou (1991), "Nonlinear nature of gravitation and gravitational-wave experiments,"

Physical Review Letters, **67**, Number 12, September 16, pp. 1486-1489.

E. Podkletnov and R. Nieminen (1992), "A possibility of gravitational force shielding by bulk YBa2Cu3O7

superconductor", Physica C., 203 441.

- N. Li and D.G. Torr (1992), "Gravitational effects on the magnetic attenuation of superconductors," Phys. Rev. B., **46** 5489.
- M. de Podesta and M. Bull (1995), "Alternative explanation of 'gravitational screening' experiments,"
 Physica C., 253 199.
- C.S. Unnikrishnan (1996), "Does a superconductor shield gravity?", *Physica C.*, 266 133.
- W. B. Bonnor and M. S. Piper (1997), "The gravitational wave rocket," *Class. Quantum Grav*, 14, pp. 2895-2904.
- F.N. Rounds (1998), "Anomalous weight behavior in YBa2Cu3O7 compounds at low temperature," *Proc.* NASA Breakthrough Propulsion Phys. Workshop., Cleveland 297.
- H. Reiss (1999), "A possible interaction between gravity and high temperature superconductivity by a materials property?", Proc. 15th Europ. Conf. Thermophys. Prop., Würzburg.
- Robert M. L. Baker, Jr. and Frederick W. Noble (1999), "Peak Power Energy Storage Device and Gravitational Wave Generator," *United States Patent 6,160,336*, filed November 19.
- R. Koczor and D. Noever (1999), "Fabrication of large bulk ceramic superconductor disks for gravity modification experiments and performance of YBCO disks under e.m. field excitation," *AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, AIAA 99-2147.
- Robert M. L. Baker, Jr. (2000), "Gravitational Wave Generator," United States Patent 6,417,597, filed July
 Robert M. L. Baker, Jr. (2000), "Preliminary Tests of Fundamental Concepts Associated with
 Gravitational-Wave Spacecraft Propulsion," American Institute of Aeronautics and Astronautics:
 Space 2000 Conference and Exposition, Paper Number 2000-5250, September 20, August 21,
 2001, Revision. (Please see Internet site at: http://drrobertbaker.com/RevisedAIAAPaper.htm.)
- E. Podkletnov and G. Modanese (2001), "Impulse gravity generator based on charged YBa2Cu3O7–y superconductor with composite crystal structure," *Los Alamos National Laboratory Archive* physics/0108005.
- R. C. Woods, S.G. Cooke, J. Helme and C.H. Caldwell (2001), "Gravity modification by high-temperature superconductors," *Proc. 37th AIAA/ASME/SAE/ASEE Joint Propulsion Conf.*, Salt Lake City, Utah, U.S.A.
- M. Tajmar and C.J. de Matos (2001), "Coupling of electromagnetism and gravitation in the weak field approximation," *J. Theoretics*, **3**, 1.
- D. Goodwin (2001), "A proposed experimental assessment of a possible propellantless propulsion system," AIAA 2001-3653, July 9.
- Jeffrey Cameron (2001), "An Asymmetric Gravitational Wave Propulsion System," AIAA-2001-3913 paper.
- Robert M L Baker, Jr. (2002), "High-Frequency Gravitational Waves," *Max Planck Institute for Astrophysics (MPA) Lecture*, May 9, Revised May 15, 2002. (Please see Internet site at:

http://drrobertbaker.com/EuropeanLecture2002.htm.)

- R. C. Woods (2002), "Comments on 'A gravitational shielding based upon ZnS:Ag phosphor' and 'The gravitational mass at the superconducting state," *Los Alamos National Laboratory Archive* physics/0204031.
- D. Maker and G.A. Robertson (2003), "Very large propulsive effects predicted for a 512kV rotator," *Proc. STAIF-2003*, Albuquerque, New Mexico, U.S.A.
- George D. Hathaway (2003), "Force beam and gravity modification experiments: an engineer's perspective," paper HFGW-03-121, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- Giorgio Fontana (2003), "Gravitational radiation applied to space travel," paper HFGW-03-111
- Marc G. Millis (2003), "NASA breakthrough propulsion physics project," paper HFGW-03-110,

Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

- Harold E. Puthoff and Michael Ibison (2003), "Polarizable vacuum 'Metric Engineering' approach to GR-type. effects," paper HFGW-03-124, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- Glen A. Robertson (2003), "Analysis of the impulse experiment using the electromagnetic analog of

gravitational waves," paper HFGW-03-116, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.

Roger Clive Woods (2003), "Gravitation and high-temperature superconductors: the current position,"

paper HFGW-03-118, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

- Eric W. Davis (2003), "Laboratory generation of high-frequency gravitons via quantization of the coupled Maxwell-Einstein fields," paper HFGW-03-125, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- Jeffrey A. Cameron (2004), "Asymetric Gravitational Wave Propulsion System," United States Patent Application Publication No. US 2004/0140403, July.
- Robert M L Baker, Jr. (2005), "Gravitational Wave Propulsion," United States Patent Publication Number 20070001541 A1, June 30.
- Salvatore Capozziello and Christian Corda (2006), "Scalar gravitational waves from scalar-tensor gravity:

production and response of interferometers," Intern. Journ. Mod. Phys. D, 15, No. 7, 1119-

1150.

Christian Corda (2007), "The production of matter from curvature in a particular linearized high order

theory of gravity and the longitudinal response function of interferometers," J. Cosmol. Astropart. Phys. JCAP04(2007)009 doi:10.1088/14757516/2007/04/009.

Marc G. Millis (2003), "NASA breakthrough propulsion physics project," paper HFGW-03-110,

Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

- Harold E. Puthoff and Michael Ibison (2003), "Polarizable vacuum 'Metric Engineering' approach to
 GR-type.

 effects," paper HFGW-03-124, Gravitational-Wave Conference, The MITRE
 Corporation, May 6-9.
- Glen A. Robertson (2003), "Analysis of the impulse experiment using the electromagnetic analog of

gravitational waves," paper HFGW-03-116, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.

- Roger Clive Woods (2003), "Gravitation and high-temperature superconductors: the current position," paper HFGW-03-118, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- Eric W. Davis (2003), "Laboratory generation of high-frequency gravitons via quantization of the coupled Maxwell-Einstein fields," paper HFGW-03-125, *Gravitational-Wave Conference*, The MITRE Corporation, May 6-9.
- Jeffrey A. Cameron (2004), "Asymetric Gravitational Wave Propulsion System," United States Patent Application Publication No. US 2004/0140403, July.
- Salvatore Capozziello and Christian Corda (2006), "Scalar gravitational waves from scalar-tensor gravity: production and response of interferometers," *Intern. Journ. Mod. Phys. D*, **15**, No. 7, 1119-

1150.

- Christian Corda (2007), "The production of matter from curvature in a particular linearized high order
 - theory of gravity and the longitudinal response function of interferometers," J. Cosmol. Astropart. Phys. JCAP04(2007)009 doi:10.1088/14757516/2007/04/009.
- Christian Corda (2007), "A longitudinal component in massive gravitational waves arising from a bimetric theory of gravity," Astropart. Phys. **28**, 2, 247-250.
- Michele Maggiore (2007), Gravitational Waves, Volume 1: Theory and Experiments, Oxford University Press, pp. 250-263.

Christian Corda (2007), "Analysis of the transverse effect of Einstein's gravitational waves," Intern. Journ.

Mod. Phys. A, 22, 26, 4859-4881.

Christian Corda (2007), "The Virgo-Minigrail cross-correlation for the detection of scalar gravitational

waves," Mod . Phys. Lett. A,. 22, No. 23, pp. 1727-1735.

Salvatore Capozziello, Christian Corda and Maria Felicia De Laurentis (2007), "Stochastic background of

relic scalar gravitational waves from scalar-tensor gravity," Modenr Physics Letters A, 22,

No. 35, 2647-2655.

- Salvatore Capozziello, Christian Corda and Maria Felicia De Laurentis (2007), "Stochastic background of gravitational wave 'tuned' by f(R) gravity," *Modern Physics Letters A*, Vol. **22**, No. 15 , 1097-1104.
- Marc G. Millis and Eric W. Davis (2009), Frontiers of Propulsion Science, Progress in Astronautics and Aeronautics Series, 227, Published by AIAA, 739 pages, ISBN-10: 1-56347-956-7 and ISBN-13: 978-1-56347-956-4.
- Christan Corda, Giorgio Fontana and Gloria Garcia Cuadrado (2009), "Gravitational Waves in Hyperspace," *Mod. Phys. Ltrs. B* 24, 8, pp. 575-582.

Giorgio Fontana (2009), "On the Foundation of Gravitation, Inertia and Gravitational Waves, " <u>http://www.scribd.com/doc/24069210/On-the-Foundations-of-Gravitation-Inertia-and-Gravitational-Waves</u> Ronald Evans (2015), *Greenglow & The Search for Gravity Control,* Troubador Publishing Ltd.,

Giorgio Fontana (2012), "Directions for gravitational wave propulsion," Journal of Space Exploration, September 13.

Robert M L Baker, Jr. (2017), Gravitational Waves: the World of Tomorrow, a Primer, with Exercises, Third Printing, Infinity Publishing, 234 pages, July 4, 2017, ISBN 978-4958-1181-4.

- M. Chiaberge J. C. Ely, E. T. Meyer, M. Georganopoulos, A. Marinucci5, S. Bianchi, G. R. Tremblay, B. Hilbert1, J. P. Kotyla, A. Capetti, S. A. Baum, F. D. Macchetto, G. Miley, C. P. O'Dea, E. S. Perlman, W. B. Sparks, and C. Norman (2017), "The puzzling case of the radio-loud QSO 3C 186: a gravitational wave recoiling black hole in a young radio source?" Astronomy & Astrophysics manuscript no. 3c186_edited_final c, https://www.newscientist.com/article/2125769-stray-supermassive-black-hole-flung-away-by-gravitational-waves/.
- Salvatore Cezar Pais (2017), "High Frequency Gravitational Waves Induced Propulsion," SAE Technical Paper 2017-01-2040, 2017, doi:10.4271/2017-01-2040, September 19.

Cosmology: Relic and Primordial Background (HFGW: kHz –THz)

John David Jackson (1962), Electrodynamics, John Wiley & Sons, New York.

L. Halpren and B. Jouvet (1968), "On stimulated photon-graviton conversion by an electromagnetic field,"

Annale H. Poincaré, Volume VII, NA1, pp. 25ff.

- S. Weinberg (1972), "Gravitation and Cosmology: Principles and Applications of the General theory of Relativity", John Wiley & So ns, Inc. New York.
- L. P. Grishchuk (1975), "The Amplification of Gravitational Waves and Creation of Gravitons in the Isotropic Universes," *LETTERE AL NUOVO CIMENTO* **12**, No.. 2 II Gennaio, pp.60-64.
- L. P. Grishchuk (1976), "Primordial Gravitons and the Possibility of their Observation," Sov. Phys. JETP

Lett. **23**, p. 293.

- L. P. Grishchuk (1977), "Graviton Creation in the Early Universe," Ann. Acad. Sci.I (N.Y.) 302, p. 439.
- L. P. Grishchuk, L. P. (1977), "Gravitational Waves in the Cosmos and the Laboratory," Usp. Fiz. Nauk

121, 629-656.

- R. D. Blandford (1978), "Massive Black Holes and Gravitational Radiation" in *Sources of Gravitational Radiation*, Edited by Larry Smarr, p. 205.
- L. P. Grishchuk (1988), "Gravitational-Wave Astronomy," Usp. Fiz. Nauk 156, 297-322).
- M. Gasperini and M. Giovannini (1993), "Dilation Contributions to the Cosmic Gravitational Wave Background," *Phys. Rev. D* 47, 1519.
- M.R. de Garcia Maia (1994), "The Stochastic Background of Gravitational Waves", PhD Thesis, University of Sussex.
- R. Brustein, M. Gasperini, M. Giovannini, and G. Veneziano (1995), "Relic gravitational waves from string

cosmology", Physics Letters B, 361 pp. 45-51.

- A. Buonanno, M. Maggiore and C. Ungarelli (1997), "Spectrum of Relic Gravitational Waves in String Cosmology," Phys. Rev D 55, 3330.
- Robert M L Baker, Jr. and Frederick W. Noble (1999), "Peak Power Energy Storage Device and

Gravitational Wave Generator," United States Patent 6,160,336, filed November 19. Concept of osculating universes and inter-universe time travel presented in this Patent.

L. P. Grishchuk (1999) "On the delectability of Relic (Squeezed) Gravitational Waves" in the Proceedings

of the 34th Rencontres de Moriond: Gravitational Waves and Experimental Gravity.

M. Giovannini (1999), "Production and detection of relic gravitons in quintessential inflationary models,"

Phys. Rev. D 60, pp. 123511-8.

- M. Giovannini (1999), "Relic GWs in the quintessential inflationary model," Phys. Rev. D 60, pp.123511.
- H.J. de Vega, J. Ramirez Mittelbrünn, N. Sanchez (1999), "Generation of Gravitational Waves by Generic Sources in De Sitter Space-time," *Phys Rev D* **60**, 044007.
- M.P. Infante, N. Sanchez (2000), "The Primordial Gravitation Wave Background in String Cosmology," Phys Rev D 61, 083515.
- Michele Maggiore (2000), "Gravitational Wave Experiments and Early Universe Cosmology," *Physics Reports* **331**, pp283-367.

Rainer Weiss (2001), E-mail Communication to R. M L Baker, Jr., June 2: "High-frequency gravitational

waves, kHz - MHz (and beyond), have significant scientific interest and ideas (for their detection)

are much in demand ... primeval cosmic background (is important) ..."

Herman J. Mosquera Cuesta and Danays Morejon Gonzalez (2001), "Bursts of gravitational radiation from superconducting cosmic strings and the neutrino mass spectrum," *Phys.Lett. B* **500**, pp.215-221.

Maurizio Gasperini (2002). Please see Internet site at: http://www.ba.infn.it/~gasperin/

P. J. .Steinhardt and N. Turok (2002), "A Cyclic Model of the Universe," Science 296, p. 1436-1439.

Fang-Yu Li, Meng-Xi Tang, and Dong-Ping Shi (2002), "Electromagnetic response of a Gaussian beam to

high-frequency relic gravitational waves in quintessential inflationary models," Chongqing

University Report, December 3, pp. 1-33.

- Nikolai N. Gorkavyi (2003), "Generation of gravitational waves as a key factor for the origin and dynamics of the Universe," paper HFGW-03-115, *Gravitational-Wave Conference*, The MITRE Corp.
- M. Gasperini and G. Veneziano (2003), "Pre-big Bang," Phys. Rep. 373, 1.

G. S. Bisnovatyi-Kogan and Valentin N. Rudenko (2004), "Very High Frequency Gravitational Wave

Background in the Universe," Class. Quantum Grav. 21, pp. 3347-3359.. arXiv:gr-qc/0406089v1 22 Jun 2004

- Lawrence, C. R. (2004), "QUIET, The Q/U Imaging Experiment, Measuring CMB Polarization with Massive Arrays of Coherent Detectors," C. R. Lawrence, JPL & the QUIET Collaboration, Zel'dovich-90, Space Research Institute, December 21.
- Yang Zhang, Yefei Yuan, Wen Zhao and Ying-Tian Chen (2005), "Relic gravitational waves in the

accelerating Universe," Classical and Quantum Gravity 22, 1383-1394.

- M. Cavaglia', G. De Risi and M. Gasperini (2005), "Relic Gravitons on Kasner-Like Brane," *Phys. Lett. B* **610**, 9.
- Yang Zhang, Zhao Wen, Yuan Ye-Fei, and Xia Tian-Yang (2005), "Numeric Spectrum of Relic

Gravitational Waves in Accelerating Universe," Chin . Phys. Lett. 22, No. 7, 1817.

Latham A. Boyle and Paul J. Steinhardt (2005), "Probing the early universe with inflationary gravitational waves," <u>http://arxiv.org/PS_cache/astro-ph/pdf/0512/0512014v1.pdf</u>.

- Germ'an Izquierdo S'aez (2005), "Relic gravitational wave in the expanding Universe," PhD Thesis, Departamento de *F'isic (F'isica Estad'istica) Universidad Aut'onoma de Barcelona,* June 23.
- G. Cella (2006), "Stochastic Background Data Analysis," First ENTApP-GWA Joint Meeting, January,

Institute d'Astrophysique de Paris.

- G. Sigl (2006), "Cosmological Backgrounds of Neutrons, Photons, and Gravitational Waves," First ENTApP-GWA Joint Meeting, January, *Institute d'Astrophysique de Paris*.
- L. P. Grishchuk (2006), "Relic Gravitational Waves and Cosmology," Uspekhi Fiz. Nauk .176, March 5,

36pp.

L. P. Grishchuk, et al. (2006), LIGO Technical Note T060270-00-Z (Pasadena :California Inst. Tech.),

http://www.ligo.caltech.edu /docs/ T/ T060270-00.pdf.

Xianhong Zhang and Fangyu Li (2006), "Energy-Momentum Pseudo-Tensor of Relic Gravitational Wave

polarization States," Chinese Physics Letters 23, pp. 1395-1397.

Zhi-Jun Lee and Zhen-Zhu Wan (2006), "Noises in Detecting Relic Gravitational Waves," Chinese Physics

Letters 23, No. 12, pp. 3183--3186.

Otakar Svitek and Jiri Podolsky (2006), "Evolution of high-frequency gravitational waves in some cosmological models," *Czechoslovak Journal of Physics* **56**, 1.

Y. Zhang, X. Z. Er, T. Y. Xia, W. Zhao and H. X. Miao (2006), "An exact analytic spectrum of relic

gravitational wave in an accelerating universe," Class. Quantum Grav. 23, 3783-3800.

Wen Zhao and Yang Zhang (2006), "Analytic approach to the CMB polarization generated by relic

gravitational waves," Phys. Rev. D 74, 083006.

- Winstein, B. (2006), "QUIET: Goals and Status, "Fundamental Physics With Cosmic Microwave Background Radiation', 2nd Irvine Cosmology Conference, Beckman Center, University of California, Irvine, CA, March 23-25.
- Hogan, Craig J. (2007), "Gravitational Waves from Cosmic Superstrings," Winter Joint Meeting, American

Astronomical Society/American Association of Physics Teachers, Seattle, Washington, USA,

January 5-10, paper 074.13.

Valentin Rudenko (2007), "High-Frequency Gravitational Waves of Astrophysical Origin," in the

proceedings of the HFGW2 Workshop, Institute of Advanced Studies at Austin, Texas.

Christian Corda (2007), "Tuning the Stochastic Background of Gravitational Waves Using

the WMAP Data," Mod. Phys. Lett. A, 22, No. 16 , pp. 11671173.

A.W. Beckwith (2007), "Several routes for determining entropy generation in the early universe, links to CMBR spectra, and relic neutrino production," Presented at 6th International Conference on Gravitation and Cosmology (ICGC-2007), Ganeshkhind, Pune, India, 17-21 Dec 2007 and 43rd Rencontres de Moriond: Cosmology, La Thuile, Italy, 15-22 Mar 2008 and 23rd International Conference on Neutrino Physics and Astrophysics (Neutrino 2008), Christchurch, New Zealand, 26-31 May 2008. e-Print: arXiv:0712.0029.

Salvatore Capozziello, Christian Corda and Maria Felicia De Laurentis (2007), "Stochastic background of

relic scalar gravitational waves from scalar tensor gravity," *Modern Physics Letters A*, **22**, No. 35 26472655.

- L. P. Grishchuk (2007), "High-frequency relic gravitational waves and their detection," 2nd High-Frequency Gravitational Wave Symposium, Institute for Advanced Studies at Austin, 11855 Research Boulevard, Austin, TX 78759, September 19. http://www.gravwave.com/docs/Grishchuk%20%20HFGW%20Lect.pdf
- B. Abbott, et al. (2007), "Searching for a stochastic background of gravitational waves with the laser interferometer gravitational wave observatory," *Astrophys. J.* **659**, **pp**. 918-930.
- Daniel Baumann, Paul Steinhardt, Keitaro Takahashi and Kiyotomo Ichiki (2007), "Gravitational Wave Induced by Primordial Scalar Perturbations," arXiv:hep-th/0703290v1 30 Mar 2007
- Katherine Jones-Smith, ,Lawrence M. Krauss1, and Harsh Mathur (2007), "A Nearly Scale Invariant Spectrum of Gravitational Radiation from Global Phase Transitions," arXiv:0712.0778v1 [astro-ph] 5 Dec 2007.
- Samtleben, D. (2007), "Measuring the Cosmic Microwave Background Radiation (CMBR) polarization with QUIET," *II. Nuovo Cimnt* (in Press)
- B. Abbott, et al. (2007). "Searching for a Stochastic Background of Gravitational Waves with

the Laser Interferometer Gravitational Wave Observatory," The Astrophysical Journal 659, :918-

- Andrew W. Beckwith (2008), "Implications for the Cosmological Landscape: Can Thermal Inputs from a Prior Universe Account for Relic Graviton Production?" in the proceedings of *Space Technology and Applications International Forum (STAIF-2008)*, edited by M.S. El-Genk, American Institute of Physics Conference Proceedings, Melville, NY **969**, p.1091.
- C. Destri, H. J. de Vega, N. G. Sanchez, (2008), "MCMC analysis of WMAP and SDSS data points to broken symmetry inflation potentials and provides a lower bound on the tensor to scalar ratio,", *Phys. Rev. D* 77, 043509
- M. Giovannini (2008) *Primer on the Physics of the Cosmic Microwave Background*, World Press Scientific, Hackensack, New Jersey, USA.
- Christian Corda (2008), "On the longitudinal response function of interferometers
 - for massive gravitational waves from a bimetric theory of gravity," Astrophys Space Sci

DOI 10.1007/s10509-008-9860-1

L. P. Grishchuk (2008), "Discovering Relic Gravitational Waves in Cosmic Microwave Background Radiation," Proceedings of the School, Eds. I. Ciufolini and R. Matzner, (in press) Springer 2008,

arXiv:0707.3319v3

- Sergei Bashinsky (2008), "Coupled Evolution of Primordial Gravity Waves and Relic Neutrinos," <u>arXiviastro-ph/0505502v</u>
- Andrew W. Beckwith (2009), "Relic High Frequency Gravitational Waves, Neutrino Physics, and Icecube," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 003), American Institute of Physics Conference Proceedings, Melville, NY **1103**, pp. 564-570.
- Andrew W. Beckwith (2009), "Relic High Frequency Gravitational Waves from the Big Bang and How to Detect Them," After Peer Review, Accepted for Publication in the *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF)*, 24-27 February, Edited by Glen Robertson. (Paper 031), American Institute of Physics Conference Proceedings, Melville, NY **1103**, p. 571.
- Andrew W. Beckwith (2009), "Bounds upon Graviton mass, and making use of the difference between Graviton propagation speed and HFGW transit speed to observe post Newtonian corrections to Gravitational potential fields," *International Symposium on Experimental Gravitation,* January 5th 9th, Kerala, India arXiv.org/abs/0812.1067.

- Hooshyar Assadullahi and David Wands (2009), "Gravitational waves from an early matter era," <u>arXiv.org</u> > <u>astro-ph</u> > arXiv:0901.0989v1.
- Andrew W. Beckwith (2009), "Entropy growth in the early universe and the transferal of memory from a prior universe to today's universe," COSPAR, *Presented within LQC section of 12th Marcell Grossman Meeting '2009 <u>http://www.icra.it/MG/mg12/en/</u>
- Fangyu Li and Yang Nan (2009), "Phase and Polarization State of High-Frequency Relic Gravitational Waves," Chinese Physics Letters 26, No. 5, 050402.
- Andrew W. Beckwith (2009), "Entropy Growth in the Early Universe," please visit:

http://www.gravwave.com/docs/Entropy%20 provisional%20draft%20 Andrew%20Beckwith.pdf

- Christan Corda, Giorgio Fontana and Gloria Garcia Cuadrado (2009), "Gravitational Waves in Hyperspace," Mod. Phys. Ltrs. B 24, 8, pp. 575-582.
- Andrew W. Beckwith (2009), "Entropy growth in the early and confirmation of initial big bang conditions (Why the quark-gluon model is not the best analogy)," <u>http://www.gravwave.com/docs/Andrew%20Beckwith,%20Entropy%20Growth%20in%20Early%20Universe</u> <u>.pdf</u>
- D. Clerv and A. Cho (2009), "Herschel will open a new vista on infant stars and galaxies ... while Planck dusts for finger prints of Inflation," *Science*, **324**, pp. 584-586, May.
- E. P. Abbott, et al., LIGO Scientific Collaboration and the Virgo Collaboration (2009), "An upper limit on the stochastic gravitational-wave background of cosmological origin," *Nature* **460**, pp. 990-994.
- Andrew W. Beckwith (2010), "HFGW and the search for relic gravitons / entropy increase from the early universe," *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010)*, February 23- 26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson., American Institute of Physics Conference Proceedings, Melville. NY, USA 1208.
- Andrew W. Beckwith (2010), "Detection of Gravitational waves with semi classical features and cosmological implications (of such semi classical features)," *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010)*, February 23-26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson. (Paper 009), American Institute of Physics Conference Proceedings, Melville. NY, USA **1208**.
- Christian Corda (2010)," Information on the inflation field from the spectrum of relic gravitational waves," *General Relativity and Gravitation* **42**,5, pp 1323-1333.
- Andrew W. Beckwith (2010), "Stretched neutrinos, and the supposed linkage to Gravitons/ HFGW data sets," *Proceedings of the Space, Propulsion and Energy Sciences International Forum (SPESIF 2010)*, February 23- 26, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, U.S.A., Edited by Glen Robertson. (Paper 031), American Institute of Physics Conference Proceedings, Melville. NY, USA **1208**.
- Andrew W. Beckwith (2010) "Cosmic deceleration parameter q(Z) dependence upon gravitons? Implications for DM models, DE, and the search for gravitons," The *Open Astronomy Journal: Special Edition* for "Big Questions in Cosmology," Editor, C. Corda.
- Lawrence M. Krauss, Scott Dodelson and Stephen Meyer (2010), "Primordial Gravitational Waves and Cosmology," Science **328**, pp. 989-992.
- Christian Corda (2012), "Primordial Gravity's Breath," *Electronic Journal of Theoretical Physics* 9, 26, pp.1-10. http://arxiv.org/abs/1110.1772
- Andrew W. Beckwith (2013), "How Gravion Power Values And A Graviton Count From The Electroweak Era Give Strain And Heavy Gravity Values," Chongqing University Department of Physics Report, Chongqing, P. R. China, 400014, 8/28/2013.

Service, R. F. (2013) The Cyborg Era Begins. *Science*,340, 1162-1165.http://dx.doi.org/10.1126/science.340.6137.1162

- Andrew W. Beckwith (2013), "Linkage of Classical (3 Dimensional) and QM geometry(2 Dimensional) via Hopf mapping and its implications for relic GW power production," Chongqing University Chongqing, PRC Department of Physics: Chongqing University, September
- P. A. R. Ade, et al. BICE P2 Collaboration (2014), "BICE P2I: Detection of B-mode POLARIZATION AT DEGREE ANGULAR SCALES," <u>http://vixra.files.wordpress.com/2014/03/bicep2abstract.png</u>, March 17.
- J. B. Dent, Lin Krauss and H. Mathur (2014), "Killing the Straw Man: Does BICEP Prove Inflation?" arXiv:403.5166v1 [astro-ph. CO] 20 Mar 2014.
- Andrew W. Beckwith (2014), "How graviton power values and a graviton count from the electroweak era give strain and heavy gravity values," *Proceedings of 2nd International North Atlantic University Union (NAUN) Conference (MCSS'14)*, May 15-17, Gdansk, Poland.
- Amjad Ashoorioon, Brandon Fung, Robert B. Mann, Marius Oltean M. M. Sheikh Jabbari (2014), "Gravitational Waves from Preheating in M-flation," <u>arXiv:1312.2284</u> [hep-th].
- Hao Wen, Fangyu Li and Zhenyun (2014),"Electromagnetic response produced by interaction of high-frequency gravitational waves from braneworld with galactic-extragalactic magnetic fields," *Physical Review D* 89, 104025. Strong High-Frequency Gravitational Waves GHz to THz band.
- Ron Cowen (2014), "Big bang findings challenged, Signal of gravitational waves was too weak to be significant ..." Nature 510, p.20.
- Paul Steinhardt (2014), "Big Bang blunders bursts the multiverse bubble," Nature 510, p.9.
- Hao Wen, Fangyu Li, Zhenyun Fang and Andrew Beckwith (2014), "Impulsive cylindrical gravitational wave: one possible radiative form emitted from cosmic strings and corresponding electromagnetic response," The European Physical Journal 74, 2998.
- Laura Bianca Bethke (2015), "Exploring the Early Universe with Gravitational Waves," ISBN 978-3-319-17449, Springer.
- Andrew W. Beckwith (2016), "Gedanken Experiment for Fluctuation of Mass of a Graviton, Based on the Trace of GR Stress Energy Tensor-Pre Planckian Conditions that Lead to Gaining of Graviton Mass, and Planckian Conditions That Lead to Graviton Mass Shrinking to 10⁻⁶² Grams", *Journal of High Energy Physics, Gravitation* and Cosmology 2, 19-24. doi: 10.4236/jhepgc.2016.21002.
- Andrew W. Beckwith (2016), "Geganderexperiment for Degree of Flatness, or Lack of, in Early Universe Conditions." *Journal of High Energy Physics, Gravitation and Cosmology*, 2, 57-65. doi: <u>10.4236/jhepgc.2016.21006</u>.
- Andrew W. Beckwith (2016), "Cosmic Initial Singularities in a Single Repeating Universe as Opposed to their Behavior in a Multiverse," *Journal of High Energy Physics, Gravitation and Cosmology* (JHEPGC): Accepted paper (Paper ID: 2180087).
- Andrew W. Beckwith (2016), "Addition to the Article with Stepan Moskaliuk on the Inter Relationship of General Relativity and (Quantum) Geometrodynamics, via Use of Metric Uncertainty Principle," Journal of High Energy Physics, Gravitation and Cosmology, **2**, 467-471.

- Misao Sasaki, Teruaki Suyama, Takahiro Tanaka, Shuichiro Yokoyama (2016), "Primordial black hole scenario for the gravitational wave event," <u>arXiv:1603.08338</u>.
- Robert M L Baker, Jr. (2017), Gravitational Waves: the World of Tomorrow, a Primer, with Exercises, Third Printing, Infinity Publishing, 234 pages, July 4, 2017, ISBN 978-4958-1181-4.
- Fangyu Li, Hao Wen Zhenyun Fang, Lianfu Wei, Yiwen Wang and Miao Zhang (2016), "Quasi-B-mode generated by high-frequency gravitational waves and corresponding perturbative photon fluxes," *Nuclear Physics B* 911, 500-516.
- Andrew W. Beckwith, Stefan Antusch, Francesco Cefalà, and Stefano Orani (2017)," Gravitational Waves from Oscillations after Inflation," *Phys. Rev. Lett.* **118**, 011303 Published 6 January 2017.
- Andrew Walcott Beckwith (2017), "How Minimum Time Step Leads to Causal structure used forming Entropy Production and High frequency gravitational waves," Physics Department, Chongqing University, College of Physics, Chongqing University Huxi Campus, Published March 22, Rwill9955b@gmail.com; <u>abeckwith@uh.edu</u>.
- Andrew Walcott Beckwith (2017), "Part 2: Review of Tokamak Physics as a Way to Construct a Device Optimal for Graviton Detection and Generation within a Confined Small Spatial Volume, as Opposed to Dyson's 'Infinite Astrophysical Volume 'Calculations," *Journal of High Energy Physics, Gravitation and Cosmology*, 2017, 3, 138-155 http://www.scirp.org/journal/jhepgc ISSN Online: 2380-4335.
- Minglei Tong (2017), "The high frequency portion of relic gravitational waves and their detection,"," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Andrew Walcott Beckwith (2017), "Lowest order mass of KK graviton revisited and how it may affect the blue spectrum for gravitons," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China..
- Wenbiao Han (2017), "Ultra-high frequency gravitational waves from the oscillation of electron-positron pairs,"," The 3rd International High Frequency Gravitational Wave Workshop, 7-9th, April 2017 at Southwest Jiaotong University, Chengdu, China.
- Andrew Walcott Beckwith (2017), "Could gravitons from prior Universe survive quantum bounce to reappear in present Universe?". *Journal of High Energy Physics, Gravitation and Cosmology* **3**, No. 3.
- Hsin-Yu Chen, Daniel E. Holz, John Miller, Matthew Evans, Salvatore Vitale, Jolien Creighton (2017), "Distance Measures In Gravitational-Wave Astrophysics And Cosmology," *arXiv:1709.08079v1.pdf*
- Andrew Walcott Beckwith (2017), "History lessons from the 5th Solvay meeting, 1927," Chongqing University Department of Physics Report for the 27th Solvay Conference in Physics, International Solvay Institutes, <u>http://www.gravwave.com/docs/Beckwith%20%282017%,</u> 29%20History%20lessons%20from%20the%205th%20Solvay%20meeting.pdf

Robert M L Baker, Jr. (2018) "Analyses of the Speed of Time Based on Muon Lifetime-Decay as a Transient Time," Presented to the Annual Meeting of the American Association for the Advancement of Science, February 18, Austin, Texas, USA

Li-Li Wang and Jin Li (2018), "The Effect of Inhomogeneous Background Magnetic Field on the Electromagnetic Response to High-Frequency Gravitational Waves, "ISSN 0202-2893, *Gravitation and Cosmology* **24**, No. 1, pp. 22–27. c Pleiades Publishing, Ltd.

Gravitational Collapse

- M. E. Gertsenshtein (1966). "The Possibility of an Oscillatory Nature of Gravitational Collapse," Soviet Physics JETP. (USSR) 51, 129-134 (July).
- John Paul Adrian Clark (1978), "The Role of Binaries in Gravitational Wave Production," in Sources of

Gravitational Radiation, Edited by Larry Smarr, p.457.

Harald Dimmelmeier (2001), "General Relativistic Collapse of Rotating Stellar Cores in Axisymmetry,"

PhD Dissertation, Technische Universität München, Max-Planck-Institut für Astrophysik, September 14.

Pankaj S. Joshie (2003), "Possible celestial sources of HFGW 'noise': gravitational collapse of massive

stars," paper HFGW-03-105, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

- Harald Dimmelmeier, C.D. Ott, H.-T. Janka, A. Marek, and E. Mu["]ller (2007), "Generic Gravitational-Wave Signals from the Collapse of Rotating Stellar Cores," *Phys. Rev. Lett* . **98**, 251101-1-4.
- C. D. Ott, H. Dimmelmeier, A. Marek, H. T. Janka, I. Hawke, B. Zink and E. Schnetter (2007), "3D

Collapse of Rotating Stellar Iron Cores in General Relativity Including Deleptonization and

Nuclear Equation of State," Phys. Rev. Lett . 98, 261101-1-4.

Harald Dimmelmeier (2001), "General Relativistic Collapse of Rotating Stellar Cores in Axisymmetry,"

PhD Dissertation, Technische Universität München, Max-Planck-Institut für Astrophysik, September 14.

Pankaj S. Joshie (2003), "Possible celestial sources of HFGW 'noise': gravitational collapse of massive

stars," paper HFGW-03-105, Gravitational-Wave Conference, The MITRE Corporation, May 6-9.

- Harald Dimmelmeier, C.D. Ott, H.-T. Janka, A. Marek, and E. Mu["]ller (2007), "Generic Gravitational-Wave Signals from the Collapse of Rotating Stellar Cores," *Phys. Rev. Lett* . **98**, 251101-1-4.
- C. D. Ott, H. Dimmelmeier, A. Marek, H. T. Janka, I. Hawke, B. Zink and E. Schnetter (2007), "3D

Collapse of Rotating Stellar Iron Cores in General Relativity Including Deleptonization and

Nuclear Equation of State," Phys. Rev. Lett . 98, 261101-1-4.

Tomas Bulik (2006), "High Frequency Gravitational Wave Sources," ACTA Physica Polonica B 37, No. 4,

p. 1357.

Magnetosonic and GWs

J. Moortgat and J. Kuijpers (2003), "Gravitational and Magnetosonic waves in gamma-ray bursts," Astronomy & Astrophysics, Manuscript No. aa3292.

D.Papadopous, N. Stergioulas, L. Vlahos and J. Kuijpers (2001), "Fast Magnetosonic waves driven by gravitational waves," Astronomy & Astrophysics 377, pp. 701-706. DOI: 10.1051/0004-6361:20010839.

String Theory

Amjad Ashoorioon, Brandon Fung, Robert B. Mann, Marius Oltean M. M. Sheikh Jabbari (2014), "Gravitational Waves from Preheating in M-flation," <u>arXiv:1312.2284</u> [hep-th].

Hao Wen, Fangyu Li, Zhenyun Fang and Andrew Beckwith (2014),"Impulsive cylindrical gravitational wave: one possible radiative form emitted from cosmic strings and corresponding electromagnetic response," *The European Physical Journal* **74**, 2998.