

PUBLICATIONS: PATRICK BRADY

Publications:

Brady made direct contributions to the papers by the LIGO Scientific Collaboration (LSC) marked with (*). These contributions include developing aspects of the analyses, writing major parts of the papers, running the searches, and guiding students or postdocs who were lead authors on the papers.

66. (*) B. Abbott *et al.* [LIGO Scientific Collaboration], “*Implications for the Origin of GRB 070201 from LIGO Observations*”, accepted by Ap. J. [arXiv:0711.1163].
65. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Search of S3 LIGO data for gravitational wave signals from spinning black hole and neutron star binary inspirals*”, submitted to Phys. Rev. D. [arXiv:0712.2050].
64. R. Biswas, P. R. Brady, J. D. E. Creighton, and S. Fairhurst, “*The Loudest Event Statistic: General Formulation, Properties and Applications*”, submitted to Class. Quantum Grav. [arXiv:0710.0465].
63. L. Baggio *et al.* [AURIGA Collaboration] and B. Abbott *et al.* [LIGO Scientific Collaboration], “*A Joint Search for Gravitational Wave Bursts with AURIGA and LIGO*”, submitted [arXiv:0710.0497].
62. B. Abbott *et al.* [LIGO Scientific Collaboration], “*All-sky search for periodic gravitational waves in LIGO S4 data*”, Phys. Rev. D **77**, 022001 (2008) [arXiv:0708.3818].
61. S. Fairhurst and P. Brady, “*Interpreting the results of searches for gravitational waves from coalescing binaries*”, submitted to Class. Quantum Gravity [arXiv:0707.2410].
60. Ravi Kumar Kopparapu *et al.*, “*Host galaxies catalog used in LIGO searches for compact binary coalescence events*”, submitted to Ap. J. [arXiv:0706.1283].
59. B. Abbott *et al.* [LIGO Scientific Collaboration], “*All-sky search for periodic gravitational waves in LIGO S4 data*”, Phys. Rev. D **77**, 022001 (2008) [arXiv:0708.3818].
58. (*) B. Abbott *et al.* [LIGO Scientific Collaboration], “*Search for gravitational waves from binary inspirals in S3 and S4 LIGO data*”, submitted to Phys. Rev. D.
57. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Upper limit map of a background of gravitational waves*”, Phys. Rev. D **76**, 082003 (2007) [arXiv:astro-ph/0703234].
56. B. Abbott *et al.* [LIGO Scientific Collaboration and ALLEGRO Collaboration], “*First cross-correlation analysis of interferometric and resonant-bar gravitational-wave data for stochastic backgrounds*”, Phys. Rev. D **76**, 022001 (2007) [arXiv:gr-qc/0703068].
55. Thomas Baumgarte, Patrick Brady, Jolien D E Creighton, Luis Lehner, Frans Pretorius, Ricky DeVoe, “*Learning about compact binary merger: the interplay between numerical relativity and gravitational-wave astronomy*”, accepted by Phys. Rev. D.
54. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Searching for a stochastic background of gravitational waves with LIGO*”, Astrophys. J **659**, 918 (2007) [arXiv:astro-ph/0608606].
53. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Coherent searches for periodic gravitational waves from unknown isolated sources and Scorpius X-1: Results from the second LIGO science run*”, Phys. Rev. D **76**, 082001 (2007) [arXiv:gr-qc/0605028].
52. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Search for gravitational wave radiation associated with the pulsating tail of the SGR 1806 – 20 hyperflare of 27 December 2004 using LIGO*”, Phys. Rev. D **76**, 062003 (2006).

51. (*) B. Abbott *et al.* [LIGO Scientific Collaboration], “*Joint LIGO and TAMA300 search for gravitational waves from inspiralling neutron star binaries*”, Phys. Rev. D **73**, 102002 (2006) [arXiv:gr-qc/0512078].
50. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Search for gravitational wave bursts in LIGO’s third science run*”, Class. Quant. Grav. **23**, S29 (2006) [arXiv:gr-qc/0511146].
49. (*) B. Abbott *et al.* [LIGO Scientific Collaboration], “*Search for gravitational waves from binary black hole inspirals in LIGO data*”, Phys. Rev. D **73**, 062001 (2006) [arXiv:gr-qc/0509129].
48. B. Allen, W. G. Anderson, P. R. Brady, D. A. Brown and J. D. E. Creighton, “*FINDCHIRP: An algorithm for detection of gravitational waves from inspiraling compact binaries*”, submitted to Class. Quantum Grav. [arXiv:gr-qc/0509116].
47. B. Abbott *et al.* [LIGO Scientific Collaboration], “*First all-sky upper limits from LIGO on the strength of periodic gravitational waves using the Hough transform*”, Phys. Rev. D **72**, 102004 (2005) [arXiv:gr-qc/0508065].
46. B. Abbott *et al.* [TAMA Collaboration], “*Upper limits from the LIGO and TAMA detectors on the rate of gravitational-wave bursts*”, Phys. Rev. D **72**, 122004 (2005) [arXiv:gr-qc/0507081].
45. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Upper limits on a stochastic background of gravitational waves*”, Phys. Rev. Lett. **95**, 221101 (2005) [arXiv:astro-ph/0507254].
44. (*) B. Abbott *et al.* [LIGO Scientific Collaboration], “*Search for gravitational waves from primordial black hole binary coalescences in the galactic halo*”, Phys. Rev. D **72**, 082002 (2005) [arXiv:gr-qc/0505042].
43. (*) B. Abbott *et al.* [LIGO Scientific Collaboration], “*Search for gravitational waves from galactic and extra-galactic binary neutron stars*”, Phys. Rev. D **72**, 082001 (2005) [arXiv:gr-qc/0505041].
42. B. Abbott *et al.* [LIGO Scientific Collaboration], “*Upper limits on gravitational wave bursts in LIGO’s second science run*”, Phys. Rev. D **72**, 062001 (2005) [arXiv:gr-qc/0505029].
41. B. Abbott *et al.* [LIGO Scientific Collaboration], “*A search for gravitational waves associated with the gamma ray burst GRB030329 using the LIGO detectors*”, Phys. Rev. D **72**, 042002 (2005) [arXiv:gr-qc/0501068].
40. L. Blackburn, et al. (The joint LIGO/Virgo working group), “*A first comparison of search methods for gravitational wave bursts using LIGO and Virgo simulated data*”, Class. Quant. Grav. **22**, S1293 (2005) [arXiv:gr-qc/0504060].
39. L. Blackburn, et al. (The joint LIGO/Virgo working group), “*A First Comparison Between LIGO and Virgo Inspiral Search Pipelines*”, Class. Quant. Grav. **22**, S1149 (2005) [arXiv:gr-qc/0504050].
38. B. Abbott, et al. (LIGO Scientific Collaboration), “*Limits on gravitational wave emission from selected pulsars using LIGO data*”, Phys. Rev. Lett. **94**, 181103 (2005) [arXiv:gr-qc/0410007].
37. D. A. Brown, et al., “*Searching for gravitational waves from binary inspirals with LIGO*”, Class. Quant. Grav. **21**, S1625 (2004).
36. P. J. Sutton, M. Ando, P. R. Brady, L. Cadonati et al, “*Plans for the LIGO-TAMA joint search for gravitational wave bursts*”, Class. Quantum Grav. **21**, S1801-S1807 (2004). [arXiv:gr-qc/0412123].

35. P. R. Brady and S. Ray-Majumder, “*Incorporating source-modeling information into searches for gravitational-wave bursts*”, *Class. Quantum Grav.* **21**, S1839-S1847 (2004), [arXiv:gr-qc/0405036].
34. P. R. Brady, J. D. E. Creighton and A. G. Wiseman, “*Upper limits on gravitational-wave signals based on loudest events*”, *Class. Quantum Grav.* **21**, S1775-S1781 (2004), [arXiv:gr-qc/0405044].
33. B. Abbott, et al. (LIGO Scientific Collaboration), “*Analysis of First LIGO Science Data for Stochastic Gravitational Waves*”, *Phys. Rev. D* **69**, 122004 (2004). [arXiv:gr-qc/0312088].
32. B. Abbott, et al. (LIGO Scientific Collaboration), “*First upper limits from LIGO on gravitational wave bursts*”, *Phys. Rev. D* **69**, 102001 (2004). [arXiv:gr-qc/0312056].
31. (*) B. Abbott, et al. (LIGO Scientific Collaboration), “*First analysis of LIGO data for binary neutron star coalescence*”, *Phys. Rev. D* **69**, 122001 (2004). [arXiv:gr-qc/0308069].
30. B. Abbott, et al. (LIGO Scientific Collaboration), “*Upper Limit on the Strength of Continuous Gravitational Waves Using the First Science Data from GEO and LIGO*”, *Phys. Rev. D* **69**, 082004 (2004). [arXiv:gr-qc/0308050].
29. B. Abbott, et al. (LIGO Scientific Collaboration), “*The LIGO detectors during the first science run*”, *Nucl. Instrum. Methods* **A517**, 154 (2004), [arXiv:gr-qc/0308043].
28. Patrick R Brady, Mathew W Choptuik, Carsten Gundlach and David Nielsen, “*Black-hole threshold solutions in stiff fluid collapse*”, *Class. Quant. Grav.* **19**, 6359-6376 (2002), [arXiv:gr-qc/0207096].
27. Warren G Anderson, Patrick R Brady, Jolien Creighton and Eanna E Flanagan, “*An excess power statistic for detection of burst sources of gravitational radiation*”, *Phys. Rev. D* **63**, 042003 (2001), [arXiv:gr-qc/0008066].
26. Warren G Anderson, Patrick R Brady, Jolien Creighton and Eanna E Flanagan, “*A power filter for the detection of burst sources of gravitational radiation in interferometric detectors*”, *Int. J. Mod. Phys.* **D9**, 303 (2000), [arXiv:gr-qc/0001044].
25. Patrick R Brady and Teviet Creighton, “*Searching for periodic sources with LIGO. II: Hierarchical searches*”, *Phys. Rev. D* **61**, 082001 (2000), [arXiv:gr-qc/9812014].
24. B. Allen, K. Blackburn, P. Brady, J. Creighton, T. Creighton, S. Droz, A. Gillespie, S. Hughes, S. Kawamura, T. Lyons, J. Mason, B. J. Owen, F. Raab, M. Regehr, B. Sathyaprakash, R. L. Savage, S. Whitcomb, A. Wiseman, “*Observational limit on gravitational waves from binary neutron stars in the Galaxy*”, *Phys. Rev. Letters*, **83**, 1498 (1999), [arXiv:gr-qc/9903108].
23. Patrick R Brady, Chris M Chambers, William G Larrackers and Eric Poisson, “*Radiative falloff in Schwarzschild-de Sitter spacetime*”, *Phys. Rev. D* **60**, 064003 (1999), [arXiv:gr-qc/9902010].
22. Patrick R Brady, Jolien Creighton and Kip S Thorne, “*Computing the merger of black-hole binaries: the IBBH problem*”, *Phys. Rev. D* **58**, 061501 (1998), [arXiv:gr-qc/9804057].
21. Patrick R Brady, Serge Droz, and Sharon M Morsink, “*The late time singularity inside non-spherical black holes*”, *Phys. Rev. D* **58**, 084034 (1998), [arXiv:gr-qc/9805008].
20. Patrick R Brady and Adrian C Ottewill, “*Quantum corrections to critical phenomena in gravitational collapse*”, *Phys. Rev. D* **58**, 024006 (1998), [arXiv:gr-qc/9804058].
19. Patrick R Brady, Robert C Myers and Ian G Moss, “*Cosmic censorship: as strong as ever*”, *Phys. Rev. Letters* **80**, 3432 (1998), [arXiv:gr-qc/9801032].

18. Patrick R Brady, Teviet Creighton, Curt Cutler and Bernard Schutz, “*Searching for periodic sources with LIGO*”, Phys. Rev. D **57**, 2101 (1998), [arXiv:gr-qc/9702050].
17. Patrick R Brady, Chris M Chambers and Sérgio Gonçalves, “*Phases of massive scalar field collapse*”, Phys. Rev. D **56**, R6057 (1997), [arXiv:gr-qc/9709014].
16. Patrick R Brady and Scott Hughes, “*A neutron star is unaffected by a companion at order μ/R* ”, Phys. Rev. Letters **79**, 1186-1188 (1997).
15. Patrick R Brady, Chris Chambers, William Krivan and Pablo Laguna, “*Telling tails in the presence of a cosmological constant*”, Phys. Rev. D **55**, 7538-7545 (1997).
14. Patrick R Brady, Serge Droz, Werner Israel and Sharon M Morsink, “*Double null dynamics: (2+2)-splitting of the Einstein field equations*”, Class. and Quantum Grav. **13**, 2211-2230 (1996).
13. Patrick R Brady and John D Smith, “*Black hole singularities: a numerical approach*”, Phys. Rev. Letters **75**, 1256 (1995).
12. Patrick R Brady and Chris M Chambers, “*Non-linear instability of Kerr-type Cauchy horizons*”, Phys. Rev. D **51**, 4177 (1995).
11. Patrick R Brady, “*Self-similar scalar field collapse: naked singularities and critical behavior*”, Phys. Rev. D **51**, 4168 (1995).
10. Roberto Balbinot and Patrick R Brady, “*Inside two dimensional black holes*”, Class. Quantum Grav. **11**, 1763-1773 (1994).
9. Patrick R Brady, “*Analytic example of critical behavior in scalar field collapse*”, Class. Quantum Grav. **11**, 1255-1260 (1994).
8. Patrick R Brady, Dario Nunez and Sukhanya Sinha, “*Cauchy horizon singularity without mass inflation*”, Phys. Rev. D **47**, 4239-4243 (1993).
7. Claude Barrabès, Patrick R Brady and Eric Poisson, “*The death of white holes*”, Phys. Rev. D **47**, 2383-2387 (1993).
6. Warren G Anderson, Patrick R Brady and Roberto Camporesi, “*Vacuum polarization and the black hole singularity*”, Class. Quantum Grav. **10**, 497-503 (1993).
5. Warren G Anderson, Patrick R Brady, Werner Israel and Sharon Morsink, “*Quantum effects in black hole interiors*”, Phys. Rev. Letters **70**, 1041-1044 (1993).
4. Patrick R Brady, “*Stability of Tension Stars*”, Mon. Notices Roy. Astron. Soc. (1992) **255**, 379-381.
3. Patrick R Brady and Eric Poisson, “*Cauchy horizon instability for Reissner-Nordstrom black holes in de Sitter space*”, Class. Quantum Grav., **9**, 121-126 (1992).
2. Roberto Balbinot, Patrick R Brady, Werner Israel and Eric Poisson, “*How singular are black hole interiors?*”, Phys. Lett. **161A**, 223-226 (1991).
1. Patrick R Brady, Jorma Louko and Eric Poisson, “*Stability of a shell around a black hole*”, Phys. Rev. D **44**, 1891-1894 (1991).

Books and monographs:

2. Duncan A. Brown, Patrick R. Brady, Alexander Dietz, Junwei Cao, Ben Johnson, and John McNabb, “A Case Study on the Use of Workflow Technologies for Scientific Analysis: Gravitational Wave Data Analysis”, in Ewa Deelman, Dennis Gannon, Matthew Shields, and Ian Taylor, Eds., *Workflows for eScience*, (Springer-Verlag, 2006)..
1. Patrick Brady and Jolien Creighton (Invited Contribution), “Gravitational Wave Astronomy”, in *Encyclopedia of Physical Science and Technology*, (Academic Press, 2001)..

Technical Reports:

9. LSC Analysis Committee for LIGO Scientific Collaboration, “The 2006-2007 Data Analysis White paper of the LIGO Scientific Collaboration”, LIGO technical report LIGO-T0600XX-00-Z (2006).
8. Burst Working Group, “Upper limits on the rate of burst sources of gravitational waves”, LIGO technical report LIGO-T030053-00-Z (2003).
7. Pulsar Working Group, “Methods to Establish Upper Limits on the Gravitational Wave Amplitude of Continuous Gravitational Waves”, LIGO technical report LIGO-T020186-00-Z (2002).
6. Inspiral Working Group, “Determine Upper Limits on Event Rates for Inspiralling Compact Binaries with LIGO Engineering Data”, LIGO technical report LIGO-T010025-00-Z (2001).
5. Stuart Anderson, Warren Anderson, Kent Blackburn, Patrick Brady, Duncan Brown, Philip Charlton, Jolien Creighton, T. Creighton, L. Samuel Finn, Joe Romano, Daniel Sigg, John T. Whelan, Alan Wiseman, and John Zweizig, “Conventions for data and software products of the LIGO and the LSC”, LIGO technical report LIGO-T010095-00-Z (2001).
4. Kent Blackburn, Patrick Brady, Duncan Brown, Jolien Creighton, Albert Lazzarini and Alan Wiseman, “LAL-LDAS Interface Coding Specification”, LIGO technical report LIGO-T010003-00-E (2001).
3. Warren Anderson, Masha Barnes, Kent Blackburn, Patrick Brady, Duncan Brown, Jolien Creighton, T. Creighton, Philip Ehrens, Albert Lazzarini, Isaac Salzman and Alan Wiseman, “MPI Mock Data Challenge”, LIGO technical report LIGO-T010024-00-Z (2001).
2. Warren Anderson, Patrick Brady, David Chin, Jolien Creighton, Keith Riles and John Whelan, “Beam Pattern Response Functions and Times of Arrival for Earthbound Interferometers”, LIGO technical report LIGO-T010110-00-Z (2001).
1. Bruce Allen and Patrick Brady, “Quantization noise in LIGO interferometers”, LIGO technical report LIGO-T970128-01-E (1997).

Conference proceedings and abstracts:

10. F. Beauville *et al.*, “Benefits of joint LIGO - Virgo coincidence searches for burst and inspiral signals”, J. Phys. Conf. Ser. **32**, 212 (2006) [arXiv:gr-qc/0509041].
9. Patrick Brady for the LIGO Scientific Collaboration, “Upper Limits on binary inspiral signals using LIGO S1 Data”, Bulletin of the American Physical Society, April 2003.
8. Patrick Brady (Invited Paper), “Analysis of data from interferometric gravitational-wave detectors”, in *High Frequency Gravitational-wave Detection*, Proceedings of SPIE Vol. 4856 (2002).
7. Patrick Brady (Invited Abstract), “Detecting gravitational-waves from precessing neutron stars”, Bulletin of the American Physical Society, April 2003.

6. Patrick R Brady (Invited Paper), “*Gravitational wave data analysis in the LIGO Scientific Collaboration*”, in *Astrophysical Sources of Gravitational Radiation for Ground-Based Detectors*, edited by Joan Centrella (2001).
5. Patrick Brady (Invited Abstract) , “*Gravitational-wave data analysis with LIGO*”, Bulletin of the American Physical Society, April 2001.
4. Patrick R Brady (Invited Paper), “*The internal structure of black holes*”, Prog. Theor. Phys. Suppl. **136** (1999).
3. Patrick R Brady and Mike J Cai (Invited Paper), “*Critical phenomena in gravitational collapse*”, Invited contribution to proceedings of Marcel Grossmann Eight, 21–27 June 1998, Jerusalem, [arXiv:gr-qc/9812071].
2. Patrick R Brady, “*Self-similar gravitational collapse*”, talk given at Conference on Mathematical Relativity, Vienna, Austria (1994).
1. Patrick R Brady, “*Semi-classical effects near mass-inflation singularities*”, in Proceedings of 5th Canadian Conference on General Relativity and Relativistic Astrophysics (1993).