Eric Poisson
List of publications

The list was compiled in October, 2008. It comprises 1 book, 63 papers published in refereed journals, and 11 unrefereed publications. The papers are listed in reversed chronological order. Names in sans-serif font represent graduate students or post-doctoral fellows working under my supervision.

Book

E. Poisson, *A Relativist's Toolkit: The Mathematics of Black-Hole Mechanics* (Cambridge, Cambridge University Press, 2004).

Papers in refereed journals

1. Stephanne Taylor and Eric Poisson, *Nonrotating black hole in a post-Newtonian tidal environment*, Phys. Rev. D **78**, 084016, 26 pages (2008).

2. Adam Pound and Eric Poisson, *Multi-scale analysis of the electromagnetic self-force in a weak gravitational field*, Phys. Rev. D **77**, 044012, 17 pages (2008).

3. Adam Pound and Eric Poisson, *Osculating orbits in Schwarzschild spacetime, with an application to extreme mass-ratio inspirals*, Phys. Rev. D **77**, 044013, 18 pages (2008).

4. B. Preston and E. Poisson, *A light-cone gauge for black-hole perturbation theory*, Phys. Rev. D **74**, 064010, 13 pages (2006).

5. B. Preston and E. Poisson, *Light-cone coordinates based at a geodesic world line*, Phys. Rev. D **74**, 064009, 10 pages (2006).

6. R. Haas and E. Poisson, *Mode-sum regularization of the scalar self-force: Formulation in terms of a tetrad decomposition of the singular field*, Phys. Rev. D **74**, 044009, 29 pages (2006).

7. A. Pound, E. Poisson, and B.G. Nickel, *Limitations of the adiabatic approximation to the gravitational self-force*, Phys. Rev. D **72**, 124001, 9 pages (2005).

8. K. Martel and E. Poisson, *Gravitational perturbations of the Schwarzschild spacetime: A practical covariant and gauge-invariant formalism*, Phys. Rev. D **71**, 104003, 13 pages (2005).

9. E. Poisson, *Metric of a tidally distorted, nonrotating black hole*, Phys. Rev. Lett. **94**, 161103, 4 pages (2005).

10. R. Haas and E. Poisson, *Mass change and motion of a scalar charge in cosmological spacetimes*, Class. Quantum Grav. **22**, S739–S752 (2005).

11. E. Poisson, *Absorption of mass and angular momentum by a black hole: Time-domain formalisms for gravitational perturbations, and the small-hole/slow-motion approximation*, Phys. Rev. D **70**, 084044, 36 pages (2004).

12. E. Poisson, *Radiation reaction of point particles in curved spacetime*, Class. Quantum Grav. **21**, R153–R232 (2004).

13. E. Poisson, *The motion of point particles in curved spacetime*, Living Rev. Relativity **7**, Online article: http://www.livingreviews.org/lrr-2004-6 (2004).

14. S. Detweiler and E. Poisson, *Low multipole contributions to the gravitational self-force*, Phys. Rev. D **69**, 084019, 18 pages (2004).

15. E. Poisson, *Retarded coordinates based at a world line, and the motion of a small black hole in an external universe*, Phys. Rev. D **69**, 084007, 21 pages (2004).

16. K. Martel and E. Poisson, *A one-parameter family of time-symmetric initial data for the radial infall of a particle into a Schwarzschild black hole*, Phys. Rev. D **66**, 084001, 16 pages (2002).

17. E. Poisson, *Radiative falloff of a scalar field in a weakly curved spacetime without symmetries*, Phys. Rev. D **66**, 044008, 17 pages (2002).

18. L.M. Burko, A.I. Harte, and E. Poisson, *Mass loss by a scalar charge in an expanding universe*, Phys. Rev. D **65**, 124006, 11 pages (2002).

19. M.J. Pfenning and E. Poisson, *Scalar, electromagnetic, and gravitational self-forces in weakly curved spacetimes*, Phys. Rev. D **65**, 084001, 30 pages (2002).

20. W.G. Laarakkers and E. Poisson, *Radiative falloff in Einstein-Straus spacetime*, Phys. Rev. D **64**, 084008, 13 pages (2001).

21. K. Martel and E. Poisson, *Regular coordinate systems for Schwarzschild and other spherical spacetimes*, Am. J. Phys. **69**, 476–480 (2001).

22. W. Tichy, E.E. Flanagan, and E. Poisson, *Can the post-Newtonian gravitational waveform of an inspiraling binary be improved by solving the energy balance equation numerically?*, Phys. Rev. D **61**, 104015, 11 pages (2000).

23. K. Martel and E. Poisson, *Gravitational waves from eccentric compact binaries: Reduction in signal-to-noise ratio due to nonoptimal signal processing*, Phys. Rev. D **60**, 124008, 8 pages (1999).

24. P.R. Brady, C.M. Chambers, W.G. Laarakkers, and E. Poisson, *Radiative falloff in Schwarzschild-de Sitter spacetime*, Phys. Rev. D **60**, 064003, 10 pages (1999).

25. S. Droz, D.J. Knapp, E. Poisson, and B.J. Owen, *Gravitational waves from inspiraling compact binaries: Validity of the stationary-phase approximation to the Fourier transform*, Phys. Rev. D **59**, 124016, 8 pages (1999).

26. W.G. Laarakkers and E. Poisson, *Quadrupole moments of rotating neutron stars*, Astrophys. J. **512**, 282–287 (1999).

27. S.W. Leonard and E. Poisson, *Gravitational waves from binary systems in circular orbits: Convergence of a partially-bare multipole expansion*, Class. Quantum Grav. **15**, 2075–2081 (1998).

28. E. Poisson, *Gravitational waves from inspiraling compact binaries: The quadrupole-moment term*, Phys. Rev. D **57**, 5287–5290 (1998).

29. S.W. Leonard and E. Poisson, *Radiative multipole moments of integer-spin fields in curved spacetime*, Phys. Rev. D **56**, 4789–4814 (1997).

30. S. Droz and E. Poisson, *Gravitational waves from inspiraling compact binaries: Second post-Newtonian waveforms as search templates*, Phys. Rev. D **56**, 4449–4454 (1997).

31. E. Poisson, *Erratum and Addendum: Gravitational radiation from a particle in circular orbit around a black hole. VI. Accuracy of the post-Newtonian expansion*, Phys. Rev. D **55**, 7980–7981 (1997).

32. L.E. Simone, S.W. Leonard, E. Poisson, and C.M. Will, *Gravitational waves from binary systems in circular orbits: Does the post-Newtonian expansion converge?*, Class. Quantum Grav. **14**, 237–256 (1997).

33. E. Poisson, *Gravitational radiation from infall into a black hole: Regularization of the Teukolsky equation*, Phys. Rev. D **55**, 639–649 (1997).

34. E. Poisson, *Measuring black-hole parameters and testing general relativity using gravitational-wave data from space-based interferometers*, Phys. Rev. D **54**, 5939–5953 (1996).

35. E. Poisson and M. Visser, *Thin-shell wormholes: Linearization stability*, Phys. Rev. D **52**, 7318–7321 (1995).

36. E. Poisson, *Gravitational radiation from a particle in circular orbit around a black hole. VI. Accuracy of the post-Newtonian expansion*, Phys. Rev. D **52**, 5719–5723 (1995).

37. L.E. Simone, E. Poisson, and C.M. Will, *Head-on collision of compact objects in general relativity: Comparison of post-Newtonian and perturbation approaches*, Phys. Rev. D **52**, 4481–4496 (1995).

38. E. Poisson and C.M. Will, *Gravitational waves from inspiraling compact binaries: Parameter estimation using second-post-Newtonian waveforms*, Phys. Rev. D **52**, 848–855 (1995).

39. E. Poisson and M. Sasaki, *Gravitational radiation from a particle in circular orbit around a black hole. V. Black-hole absorption and tail corrections*, Phys. Rev. D **51**, 5753–5767 (1995).

40. D. Marković and E. Poisson, *Classical stability and quantum instability of black-hole Cauchy horizons*, Phys. Rev. Lett. **74**, 1280–1283 (1995).

41. A. Ori and E. Poisson, *Death of cosmological white holes*, Phys. Rev. D **50**, 6150–6157 (1994).

42. C. Cutler, D. Kennefick, and E. Poisson, *Gravitational radiation reaction for bound motion around a Schwarzschild black hole*, Phys. Rev. D **50**, 3816–3835 (1994).

43. E. Poisson, *Gravitational-wave astronomy*, J. Roy. Astron. Can. **87**, 234–243 (1993).

44. E. Poisson, *Gravitational radiation from a particle in circular orbit around a black hole. IV: Analytical results for the slowly rotating case*, Phys. Rev. D **48**, 1860–1863 (1993).

45. A. Apostolatos, D. Kennefick, A. Ori, and E. Poisson, *Gravitational radiation from a particle in circular orbit around a black hole. III: Stability of circular orbits under radiation reaction*, Phys. Rev. D. **47**, 5376–5388 (1993).

46. C. Cutler, T.A. Apostolatos, L. Bildsten, L.S. Finn, E.E. Flanagan, D. Kennefick, D.M. Markovic, A. Ori, E. Poisson, G.J. Sussman, and K.S. Thorne, *The last three minutes: Issues in gravitational-wave measurements of coalescing compact binaries*, Phys. Rev. Lett. **70**, 2984–2987 (1993).

47. C. Barrabès, P.R. Brady, and E. Poisson, *Death of white holes*, Phys. Rev. D **47**, 2383–2387 (1993).

48. C. Cutler, L.S. Finn, E. Poisson, and G.J. Sussman, *Gravitational radiation from a particle in circular orbit around a black hole. II: Numerical results for the nonrotating case*, Phys. Rev. D **47**, 1511-1518 (1993).

49. E. Poisson, *Gravitational radiation from a particle in circular orbit around a black hole. I: Analytical results for the nonrotating case*, Phys. Rev. D **47**, 1497–1510 (1993).

50. R. Balbinot and E. Poisson, *Mass inflation: The semiclassical regime*, Phys. Rev. Lett. **70**, 13–16 (1993).

51. P.R. Brady and E. Poisson, *Cauchy-horizon instability for Reissner-Nordström black holes in de Sitter space*, Class. Quantum. Grav. **9**, 121–125 (1992).

52. R. Balbinot, P.R. Brady, W. Israel and E. Poisson, *How singular are black hole interiors?*, Phys. Lett. A **161**, 223–226 (1991).

53. P.R. Brady, J. Louko and E. Poisson, *Stability of a shell around a black hole*, Phys. Rev. D **44**, 1891–1894 (1991).

54. E. Poisson, *Quadratic gravity as hair tonic for black holes*, Class. Quantum Grav. **8**, 639–650 (1991).

55. E. Poisson, *Quadratic gravity and the black hole singularity*, Phys. Rev. D **43**, 3923–3928 (1991).

56. C. Barrabès, W. Israel, and E. Poisson, *Collision of lightlike shells and mass inflation inside black holes*, Class. Quantum Grav. **7**, L273-L278 (1990).

57. E. Poisson, *A look inside black holes*, J. Roy. Astron. Soc. Can. **84**, 191–198 (1990).

58. E. Poisson and W. Israel, *The internal structure of black holes*, Phys. Rev. D **41**, 1796–1801 (1990).

59. R. Balbinot and E. Poisson, *On the stability of the Schwarzschild - de Sitter model*, Phys. Rev. D **41**, 395–402 (1990).

60. E. Poisson and W. Israel, *Eschatology of the black hole interior*, Phys. Lett. **B233**, 74–78 (1989).

61. S. Pineault and E. Poisson, *Encounters between degenerate stars and extra-solar comet clouds*, Astrophys. J. **347**, 1141–1154 (1989).

62. E. Poisson and W. Israel, *Inner-horizon instability and mass-inflation in black holes*, Phys. Rev. Lett. **63**, 1663–1666 (1989).

63. E. Poisson and W. Israel, *Structure of the black hole nucleus*, Class. Quantum Grav. **5**, L201–L205 (1988).

Conference proceedings

1. E. Poisson, *The gravitational self-force*, in *General relativity and gravitation. Proceedings of the 17th International Conference*, edited by P. Florides, B. Nolan, and A. Ottewill (World Scientific, New Jersey, 2005).

2. W.G. Laarakkers and E. Poisson, *Radiative falloff in black-hole spacetimes*, in *General relativity and relativistic astrophysics; Eighth Canadian conference*, edited by C.P. Burgess and R.C. Myers (American Institute of Physics, Melville, 1999).

3. E. Poisson, *Gravitational waves from inspiraling compact binaries: Accuracy of the post-Newtonian waveforms*, in *Second Workshop on Gravitational Wave Data Analysis*, edited by M. Davier and P. Hello (Editions Frontieres, 1998).

4. E. Poisson, *Black-hole interiors and strong cosmic censorship*, in *Internal Structure of Black Holes and Spacetime Singularities*, edited by Lior M. Burko and Amos Ori (Institute of Physics, Bristol, 1997).

5. E. Poisson, *Gravitational waves from coalescing compact binaries*, in *The Sixth Canadian Conference on General Relativity and Relativistic Astrophysics*, edited by S.P. Braham, J.D. Gegenberg, and R.J. McKellar (Fields Institute Communications, American Mathematical Society, Providence, 1997).

6. E. Poisson, *Radiation reaction for bound motion in Schwarzschild*, in *Proceedings of the Fifth Canadian Conference on General Relativity and Relativistic Astrophysics*, edited by R.B. Mann and R.G. McLenaghan (World Scientific, Singapore, 1994).

7. E. Poisson, *Semi-classical gravity and the black hole singularity*, in *Gravitation: A Banff summer institute*, edited by R. Mann and P. Wesson (World Scientific, Singapore, 1991).

8. E. Poisson, *Quantum effects near the black hole singularity*, in *Proceedings of the third Canadian conference on general relativity and relativistic astrophysics*, edited by A. Coley, F. Cooperstock, and S. Tupper (World Scientific, Singapore, 1990).

Unpublished papers

1. J. Molina Sanchez and Eric Poisson, *Extended-body approach to the electromagnetic self-force in curved spacetime* (2006), posted in the Los Alamos preprint archives at `http://xxx.lanl.gov/abs/gr-qc/0512111`.

2. E. Poisson, *A reformulation of the Barrabès-Israel null-shell formalism* (2002), posted in the Los Alamos preprint archives at `http://xxx.lanl.gov/abs/gr-qc/0207101`.

3. E. Poisson, *An introduction to the Lorentz-Dirac equation* (1999), posted in the Los Alamos preprint archives at `http://xxx.lanl.gov/abs/gr-qc/9912045`.

Papers published or submitted by students and postdocs while working under my supervision

1. R. Haas, *Scalar self-force on eccentric geodesics in Schwarzschild spacetime: a time-domain computation*, Phys. Rev. D **75**, 124011, 17 pages (2007).

2. N. Yunes, C.F. Sopuerta, L.J. Rubbo, and K. Holley-Bockelmann, *Relativistic effects in extreme mass ratio gravitational wave bursts*, submitted to the Astrophysical Journal on 19 April 2007 (arXiv:0704.2612v1).

3. C.F. Sopuerta, N. Yunes, and P. Laguna, *Gravitational recoil velocities from eccentric binary black hole mergers*, Astrophys. J. **656**, L9–L12 (2007).