

# Publications

Roland Donninger

## Publications in peer-reviewed journals

1. David Borthwick, Roland Donninger, Enno Lenzmann, and Jeremy L. Marzuola. Existence and stability of Schrödinger solitons on noncompact manifolds. Accepted in *SIAM Journal on Mathematical Analysis*, 2019.
2. Roland Donninger and Birgit Schörkhuber. Stable blowup for the supercritical Yang-Mills heat flow. *Journal of Differential Geometry* 113(1):55-94, 2019.
3. Athanasios Chatzikaleas and Roland Donninger. Stable blowup for the cubic wave equation in higher dimensions. *Journal of Differential Equations* 266(10):6809–6865, 2019.
4. Roland Donninger and Irfan Glogić. On the existence and stability of blowup for wave maps into a negatively curved target. *Analysis & PDE* 12(2):389–416, 2019.
5. Paweł Biernat and Roland Donninger. Construction of a spectrally stable self-similar blowup solution to the supercritical corotational harmonic map heat flow. *Nonlinearity* 31(8):3543–3566, 2018.
6. Roland Donninger and Birgit Schörkhuber. Stable blowup for wave equations in odd space dimensions. *Annales de l'Institut Henri Poincaré - Analyse Non Linéaire* 34:1181–1213, 2017.
7. Paweł Biernat, Roland Donninger, and Birgit Schörkhuber. Stable self-similar blowup in the supercritical heat flow of harmonic maps. *Calculus of Variations and Partial Differential Equations* 56(6):171, 2017.
8. Athanasios Chatzikaleas, Roland Donninger, and Irfan Glogić. On blowup of corotational wave maps in odd space dimensions. *Journal of Differential Equations* 263(8):5090–5119, 2017.
9. Roland Donninger. Strichartz estimates in similarity coordinates and stable blowup for the critical wave equation. *Duke Mathematical Journal* 166(9):1627–1683, 2017.
10. Matthew Creek, Roland Donninger, Wilhelm Schlag, and Stanley Snelson. Linear stability of the Skyrmion. *International Mathematics Research Notices* 8:2497–2537, 2017.

11. Annegret Y. Burtscher and Roland Donninger. Hyperboloidal evolution and global dynamics for the focusing cubic wave equation. *Communications in Mathematical Physics* 353(2):549–596, 2017.
12. Ovidiu Costin, Roland Donninger, and Irfan Glogić. Mode stability of self-similar wave maps in higher dimensions. *Communications in Mathematical Physics* 351(3):959–972, 2017.
13. Ovidiu Costin, Roland Donninger, and Xiaoyue Xia. A proof for the mode stability of a self-similar wave map. *Nonlinearity* 29(8):2451–2473, 2016.
14. Roland Donninger and Birgit Schörkhuber. On blowup in supercritical wave equations. *Communications in Mathematical Physics* 346(3):907–943, 2016.
15. Roland Donninger and Joachim Krieger. A vector field method on the distorted Fourier side and decay for wave equations with potentials. *Memoirs of the American Mathematical Society* 241(1142), 2016.
16. Ovidiu Costin, Roland Donninger, Irfan Glogić, and Min Huang. On the stability of self-similar solutions to nonlinear wave equations. *Communications in Mathematical Physics* 343(1):299–310, 2016.
17. Roland Donninger, Joachim Krieger, Jérémie Szeftel, and Willie Wong. Codimension one stability of the catenoid under the vanishing mean curvature flow in Minkowski space. *Duke Mathematical Journal* 165(4):723–791, 2016.
18. Roland Donninger and Birgit Schörkhuber. A spectral mapping theorem for perturbed Ornstein-Uhlenbeck operators on  $L^2(\mathbb{R}^d)$ . *Journal of Functional Analysis* 268(9):2479–2524, 2015.
19. Roland Donninger. Erratum to: Asymptotics and analytic modes for the wave equation in similarity coordinates. *Journal of Evolution Equations* 15(1):251–252, 2015.
20. Roland Donninger. Stable self-similar blowup in energy supercritical Yang-Mills theory. *Mathematische Zeitschrift* 278(3):1005–1032, 2014.
21. Roland Donninger, Min Huang, Joachim Krieger, and Wilhelm Schlag. Exotic blowup solutions for the  $u^5$  focusing wave equation in  $\mathbb{R}^3$ . *Michigan Mathematical Journal* 63(3):451–501, 2014.
22. Roland Donninger and Anıl Zenginoğlu. Nondispersive decay for the cubic wave equation. *Analysis & PDE* 7(2):461–495, 2014.
23. Roland Donninger and Birgit Schörkhuber. Stable blow up dynamics for energy supercritical wave equations. *Transactions of the American Mathematical Society* 366(4):2167–2189, 2014.
24. Roland Donninger and Joachim Krieger. Nonscattering solutions and blowup at infinity for the critical wave equation. *Mathematische Annalen* 357(1):89–163, 2013.

25. Ovidiu Costin, Roland Donn timer, Wilhelm Schlag, and Saleh Tanveer. Semiclassical low energy scattering for one-dimensional Schrödinger operators with exponentially decaying potentials. *Annales Henri Poincaré* 13(6):1371–1426, 2012.
26. Roland Donn timer and Birgit Schörkhuber. Stable self-similar blow up for energy subcritical wave equations. *Dynamics of Partial Differential Equations* 9(1):63–87, 2012.
27. Roland Donn timer, Wilhelm Schlag, and Avy Soffer. On pointwise decay of linear waves on a Schwarzschild black hole background. *Communications in Mathematical Physics* 309(1):51–86, 2012.
28. Roland Donn timer, Birgit Schörkhuber, and Peter C. Aichelburg. On stable self-similar blow up for equivariant wave maps: the linearized problem. *Annales Henri Poincaré* 13(1):103–144, 2012.
29. Roland Donn timer. On stable self-similar blowup for equivariant wave maps. *Communications on Pure and Applied Mathematics* 64(8):1095–1147, 2011.
30. Roland Donn timer and Wilhelm Schlag. Numerical study of the blowup/global existence dichotomy for the focusing cubic nonlinear Klein-Gordon equation. *Nonlinearity* 24(9):2547–2562, 2011.
31. Roland Donn timer, Wilhelm Schlag, and Avy Soffer. A proof of Price’s law on Schwarzschild black hole manifolds for all angular momenta. *Advances in Mathematics* 226(1):484–540, 2011.
32. Roland Donn timer and Wilhelm Schlag. Decay estimates for the one-dimensional wave equation with an inverse power potential. *International Mathematics Research Notices* 22:4276–4300, 2010.
33. Roland Donn timer. Nonlinear stability of self-similar solutions for semilinear wave equations. *Communications in Partial Differential Equations* 35(4):669–684, 2010.
34. Roland Donn timer. The radial wave operator in similarity coordinates. *Journal of Mathematical Physics* 51(2), 2010.
35. Roland Donn timer and Peter C. Aichelburg. A note on the eigenvalues for equivariant maps of the SU(2) sigma-model. *Applied Mathematical and Computational Sciences* 1(1):72–83, 2010.
36. Roland Donn timer. Asymptotics and analytic modes for the wave equation in similarity coordinates. *Journal of Evolution Equations* 9(3):511–523, 2009.
37. Roland Donn timer and Peter C. Aichelburg. Spectral properties and linear stability of self-similar wave maps. *Journal of Hyperbolic Differential Equations* 6(2):359–370, 2009.
38. Roland Donn timer and Peter C. Aichelburg. On the mode stability of a self-similar wave map. *Journal of Mathematical Physics* 49(4), 2008.

## Submitted

1. Roland Donninger and Irfan Glogić. Strichartz estimates for the one-dimensional wave equation. Preprint arXiv:1908.02157, 2019.
2. Roland Donninger and Ziping Rao. Blowup stability at optimal regularity for the critical wave equation. Preprint arXiv:1811.08130, 2018.
3. Paweł Biernat, Roland Donninger, and Birgit Schörkhuber. Hyperboloidal similarity coordinates and a globally stable blowup profile for supercritical wave maps. Preprint arXiv:1707.09812, 2017.

## Other

1. Roland Donninger. Nondispersive decay for the cubic wave equation. *Oberwolfach Report*, 10(3):2338–2339, 2013.
2. Roland Donninger. *Spectral Properties and Stability of Self-Similar Wave Maps*. Südwestdeutscher Verlag für Hochschulschriften, 2009.