

## Publications

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1. Sophia Demoulini and David Stuart, “Adiabatic limit and the slow motion of vortices in a Chern-Simons-Schrödinger system”, *Communications in Mathematical Physics*, **290**(2), (2009), 597-632. 36 pages.
2. Eamonn Long and David M.A. Stuart, “Effective dynamics for solitons in the nonlinear Klein-Gordon-Maxwell system and the Lorentz force law”, *Reviews in Mathematical Physics*, **21** (4), (2009) 459–510. 52 pages.
3. Buslaev, V. S., Komech, A. I., Kopylova, E. A. and Stuart, D.M.A., “On asymptotic stability of solitary waves in Schrödinger equation coupled to nonlinear oscillator” *Communications in Partial Differential Equations*, **33** (4-6), (2008), 669–705. 37 pages
4. David M. A. Stuart, “Analysis of the adiabatic limit for solitons in classical field theory”, *Proceedings of The Royal Society of London. Series A. Mathematical, Physical and Engineering Sciences*, **463**, (2007), 2753–2781. 29 pages.
5. Sophia Demoulini and David M. A. Stuart, “Existence and regularity for generalised harmonic maps associated to a nonlocal polyconvex energy of Skyrme type”, *Calculus of Variations and Partial Differential Equations*, **30** (4), (2007), 523–546. 24 pages.
6. David M.A. Stuart, “Geodesics and the Einstein nonlinear wave system”, *Journal de Mathématiques Pures et Appliquées*, **83**(5), (2004), 541-587 and published online at <http://www.sciencedirect.com> as DOI:10.1016/j.matpur.2003.09.009.
7. David M.A. Stuart, “The geodesic hypothesis and non-topological solitons on pseudo-Riemannian manifolds”, *Annales Scientifiques de l'École Normale Supérieure*, **37**(2), (2004), 312-362.
8. David M.A. Stuart, “Geodesics and the Einstein-nonlinear wave system”, *Comptes rendus de l'Académie des Sciences, Paris*, **I 336**, (2003) 615-618.
9. D. Stuart, “Modulational approach to stability of non-topological solitons”, *Journal de Mathématiques Pures et Appliquées*, **80**(1), (2001) 51-83.
10. S. Demoulini, D. Stuart and A. Tzavaras, “A variational approximation scheme for three dimensional elastodynamics with polyconvex energy”, *Archive for Rational Mechanics and Analysis*, **157**(4), (2001), 325-344.
11. D. Stuart, “ Solitons on pseudo-Riemannian manifolds: stability and motion,” *Electronic Research Announcements of the AMS* **6**, (2000), 75-89.
12. S. Demoulini, D. Stuart and A. Tzavaras, “Construction of entropy solutions of the equations of one dimensional elastodynamics via time discretization”, *Annales de l'IHP, Analyse Non-linéaire*, **17**(6), (2000), 711-731.
13. S. Demoulini and D. Stuart, “Variational approach to uniform rigid rotation of Ginzburg-Landau vortices”, *Letters in Mathematical Physics*, **52**(2), (2000),127-142.

14. D. Stuart, "Periodic solutions of the Abelian Higgs model and rigid rotation of vortices" *Geometric and Functional Analysis*, **9**(3), (1999), 568-595.
15. D. Stuart, "Uniform stability of monopoles" *Calculus of Variations and Partial Differential Equations* **8**(2), (1999), 123-157.
16. D. Stuart, "Semi-linear wave equations on pseudo-Riemannian manifolds: stability and motion of nontopological solitons," *International Conference on Differential Equations*, (Berlin, 1999), 351–353, World Sci. Publishing, River Edge, NJ, 2000.
17. D. Stuart, "Solitons on pseudo-Riemannian manifolds I" *Communications in Partial Differential Equations* **23**(9-10), (1998), 1815-1838.
18. S. Demoulini and D. Stuart, "Gradient Flow of the superconducting Ginzburg Landau functional on the plane", *Communications in Analysis and Geometry* **5**(1), (1997), 121-198.
19. D. Stuart, "Interaction of Superconducting Vortices and asymptotics of the Ginzburg-Landau gradient flow", *Appl. Math. Letters* **9**(5), (1996), 27-33.
20. D. Stuart, "Minimal periods for solutions of some classical field equations", *SIAM Journal of Mathematical Analysis*, **27**(4), (1996), 1095-1101.
21. D. Stuart, "The geodesic approximation for the Yang-Mills-Higgs equations", *Communications in Mathematical Physics* **166** (1994), 149-190.
22. D. Stuart, "Dynamics of Abelian Higgs vortices in the near Bogomolny regime", *Communications in Mathematical Physics* **159** (1994), 51-91.
23. D. Stuart, "Particles in a singular limit of a classical field theory", *Studies in Applied Mathematics*, **87** (1992), 239-281.
24. D. Stuart, "Perturbation theory for kinks", *Communications in Mathematical Physics*, **149** (1992), 433-462.
25. D. Stuart, "A particle field theory in the form of a hyperbolic free boundary value problem", *Communications in Partial Differential Equations* **16** (1991), 705-743.