

Publication List

(Partially supported by NSF grants DMS 9706855, 9970549, 9972043, 0400718, 0601162, 1001115):

- [69] Energy identity for approximate biharmonic maps to Riemannian manifolds and its application, *Journal of Functional Analysis*, to appear (with Shenzhou Zheng).
- [68] Blow up criterion for nematic liquid crystal flows, *CPDE*, to appear (with T. Huang).
- [67] Energy identity for a class of approximate biharmonic maps into sphere in dimension four, *DCDS-A*, to appear (with Shenzhou Zheng).
- [66] Compressible hydrodynamic flow of liquid crystals in 1D. *DCDS-A*, 32 (2012), no. 2, 539–563 (with S. J. Ding, J. Y. Lin, Y. H. Wen).
- [65] Phase transitions for potentials of high dimensional wells. *CPAM*, to appear (with F. Lin, and X. Pan).
- [64] Strong solutions of the compressible nematic liquid crystal flow. *JDE*, to appear (with T. Huang, H. Y. Wen).
- [63] Boundary regularity of stationary biharmonic maps. *CVPDE*, to appear (with Huajun Gong, Tobias Lamm).
- [62] Blow up criterion for compressible nematic liquid crystal flows in dimension three. *ARMA*, to appear (with T. Huang, H. Y. Wen).
- [61] On the heat flow of equation of surfaces of constant mean curvature. *Manuscripta Math.*, 134 (2011), no. 1-2, 259-271 (with T. Huang, Z. Tan).
- [60] Well-posedness for the heat flow of biharmonic maps with rough initial data. *J. Geom. Anal.*, in press.
- [59] Well-posedness for the heat flow of polyharmonic maps with rough initial data. *Advances in Calculus of Variations*, 4 (2011), no. 2, 175-193 (with T. Huang).
- [58] On the uniqueness of heat flow of harmonic maps and hydrodynamic flow of nematic liquid crystals. *Chin. Ann. Math. Ser. B* 31 (2010), no. 6, 921-938 (with F. H. Lin).
- [57] Well-posedness for the heat flow of harmonic maps and the liquid crystal flow with rough initial data. *Arch. Ration. Mech. Anal.*, 200 (2011), no. 1, 1-19.
- [56] Weak solution to compressible hydrodynamic flow of liquid crystals in 1D. *Discrete Contin. Dyn. Syst. Ser. B* 15 (2011), no. 2, 357-371 (with S. J. Ding, Y. H. Wen).
- [55] Notes on the regularity of harmonic map systems. *Proceedings of American Mathematical Society*, 138 (2010) no. 6, 2015-2023 (with T. Huang).
- [54] Liquid crystal flows in two dimensions. *Arch. Rational Mech. Anal.*, 197 (2010) 297-336 (with F. H. Lin and J. Y. Lin).
- [53] Landau-Lifshitz-Maxwell equations in dimension three. *Pacific Journal of Mathematics*, Vol. 243, No. 2, 2009, 243-276 (with S. J. Ding, X. G. Liu).
- [52] Regularity of Dirac-harmonic maps. *Int. Math. Research Notices*, 2009, no. 20, 3759-3792 (with D. L. Xu).
- [51] A remark on nonlinear Dirac equations. *Proceedings of American Mathematical Society*, 138 (2010), 3753-3758.
- [50] *The Analysis of Harmonic Maps and Their Heat Flows*. World Scientific Publishing Inc (2008), ISBN-109812779423 (with F. H. Lin).

- [49] Boundary regularity of polyharmonic maps in critical dimension. *Advances in Calculus of Variations*, 2, 2009, No. 1, 1-16 (with T. Lamm).
- [48] Aronsson's equation on Carnot-Carathéodory spaces. *Illinois Journal of Mathematics*, Vol. 52, No. 3, Fall 2008, 757-772 (with Y. Yu).
- [47] Uniqueness and nonuniqueness of viscosity solutions to Aronsson's equation. *Arch. Ration. Mech. Anal.*, Vol. 190, no. 2 (2008) 347-370 (with R. Jensen, Y. Yu).
- [46] C^1 -regularity of the Aronsson equation in \mathbb{R}^2 . *Ann. Inst. H. Poincaré Anal. Non Linéaire* 25 (2008) 659-678 (with Y. Yu).
- [45] Derivation of Aronsson's equation for C^1 Hamiltonian. *Trans. A.M.S.*, 361 (2009) 103-124 (with M. Crandall, Y. Yu).
- [44] Asymptotic behavior of infinity harmonic functions near an isolated singularity. *International Mathematics Research Notices* Vol. 2008, article ID rnm163, 23 pages (with O. Savin, Y. Yu).
- [43] Harmonic maps from manifolds of L^∞ -Riemannian metrics. *Calc. Var. & PDE* (2008), Vol 32, 387-405 (with W. Ishizuka).
- [42] Heat flow of harmonic maps whose gradients belong to $L(n, \infty)$. *Arch. Ration. Mech. Anal.* 188 (2008), 309-349.
- [41] Finite time singularity of Landau-Lifshitz-Gilbert equation. *International Mathematics Research Notices*, Vol. 2007, 1-25 (with S. J. Ding).
- [40] The heat flow of biharmonic maps from four dimensional manifolds. *Pure and Applied Mathematics Quarterly* (Special issue in honor of L.Simon), Vol. 3, No. 2 (2007) 595-613.
- [39] The Aronsson equation for absolute minimizers of L^∞ functionals associated with vector fields satisfying Hormander's condition. *Transactions of American Mathematical Society*, Vol. 359, no. 1 (2007) 91-113.
- [38] On Landau-Lifshitz equation in dimensions at most four. *Indiana University Mathematics Journal*, Vol. 55, no. 6 (2006) 1615-1644.
- [37] Comparison principle with generalized cones for viscosity solutions of the Aronsson equation and absolute minimizers. *Communications in Partial Differential Equations*, V.31, no. 7 (2006) 1027-1046 (with R. Gariepy, Y. Yu).
- [36] Stable-stationary harmonic maps into spheres. *Acta Math. Sin. (Engl. Ser.)* 22 (2006), no.2, 319-330 (with F-H Lin).
- [35] Viscosity convex functions on Carnot groups. *Proceedings of American Mathematical Society*, 133 (2005), no.4, 1247-1253.
- [34] A compactness theorem of n -harmonic maps. *Ann. Inst. H. Poincaré Anal. Non Linéaire*, 22 (2005), no.4, 509-519.
- [33] Regularity and Relaxed Problems of minimizing biharmonic maps into spheres. *Calculus of Variations and Partial Differential Equations*, 23 (2005), no.4, 425-450 (with M. C. Hong).
- [32] Stationary biharmonic maps from \mathbb{R}^m into a Riemannian manifold. *Communication on Pure and Applied Mathematics*, Vol. LVII (2004), 0419 – 0444.
- [31] Biharmonic maps from \mathbb{R}^4 into a Riemannian manifold. *Mathematische Zeitschrift*, 247 (2004) 65-87.
- [30] Remarks on biharmonic maps into spheres. *Calculus of Variations & Partial Differential Equations*, 21 (2004) 221-242.

- [29] A note on a fourth order PDE with critical nonlinearity.
Pacific Journal of Mathematics, Vol. 216, No. 2 (2004) 393-397.
- [28] On the mean curvature flows for σ_k -convex hypersurfaces.
Houston Journal of Mathematics, Vol.30, No.4 (2004) 997-107 (with H. Fang).
- [27] On moving Ginzburg-Landau vortices.
Communications in Analysis and Geometry, Vol. 12, No. 5 (2004) 1185-1199.
- [26] A weighted Poincaré inequality and the removal singularity for harmonic maps.
Manuscripta Mathematica, 112 (2003), 259-270.
- [25] Subelliptic harmonic maps from Carnot groups.
Calculus of Variations & Partial Differential Equations, 18 (2003), no.1, 95-115.
- [24] Regularity and blow-up analysis for J-holomorphic maps.
Communications in Contemporary Mathematics, 5 (2003), no.4, 671-704.
- [23] Energy quantization for triholomorphic maps. *Calculus of Variations & Partial Differential Equations*, 18 (2003), no.2, 145-158.
- [22] Harmonic and quasi-harmonic spheres, part III—Rectifiability of the parabolic defect measure and the generalized varifold flow. *Ann. Inst. H. Poincaré Anal. Non Linéaire*, 19, 2(2002) 209-259 (with F. H. Lin).
- [21] Harmonic and quasi-harmonic spheres, part II—Energy quantization of defect measures. *Communications in Analysis and Geometry*, V10, no. 2(2002), 341-375 (with F. H. Lin).
- [20] Limits of solutions to the generalized Ginzburg-Landau functional.
Communications in Partial Differential Equations, 27(5&6), 877-905 (2002).
- [19] Energy identity for m-harmonic maps. *Differential and Integral Equations*, 15 (2002), 1519-1532 (with W. W. Wei).
- [18] Lower semicontinuity of L-infinity functionals. *Ann. Inst. H. Poincaré Anal. Non Linéaire* 18 (2001), no. 4, 495-517 (with N. Barron and R. Jensen).
- [17] The Euler equation and absolute minimizers for L-infinity functionals.
Arch. Rational Mech. Anal. 157 (2001), no. 4, 255-283 (with N. Barron and R. Jensen)
- [16] Energy minimizing maps into piecewise uniformly regular manifolds.
Communications in Analysis and Geometry, V9, no.4, 657-682 (2001).
- [15] Regularity of high dimensional H-systems. *Journal of Nonlinear Analysis, Theory, Methods, and Applications*. V.38, no. 6 (1999), 675-686.
- [14] Partial regularity for weak flows of H-surfaces, II.
Electronic Journal of Differential Equations 1999, no.08, pp. 1-8.
- [13] A remark on flows of harmonic maps from surfaces.
Differential and Integral Equations 12 (1999), no. 2, 161-166.
- [12] Boundary partial regularity for a class of harmonic maps.
Communications in Partial Differential Equations 24 (1999), no. 1-2, 355-368.
- [11] Harmonic and quasi-harmonic spheres. *Communications in Analysis and Geometry* 7 (1999), no. 2, 397-429 (with F. H. Lin).
- [10] On the singular set of stable-stationary harmonic maps. *Calculus of Variations and Partial Differential Equations*, 9 (1999), 141-156 (with M. C. Hong).
- [9] On the p-energy minimality of $x/|x|$. *Communications in Analysis and Geometry*, (1998) Vol. 6, no. 1, 141-152 (with F. H. Lin, R. Hardt).
- [8] Energy identity for harmonic map flows from surfaces at finite singular time.

- Calculus of Variations and Partial Differential Equations*, 6 (1998) no. 4, 369-38
(with F. H. Lin).
- [7] Minimality, perturbation of singularities for some p-harmonic maps.
Indiana University Mathematics Journal. Vol 47, no. 2 (1998), 725-740.
- [6] On the singularity of p-harmonic maps. *Communication on Pure and Applied
Mathematics*, 50 (1997), no. 5, 399-447 (with F. H. Lin, R. Hardt).
- [5] Partial regularity for weak flows of H-surfaces. *Electronic Journal of Differential
Equations*, 1997, no. 20, pp. 1-12.
- [4] Bubbling phenomena of certain Palais-Smale like sequences of m-harmonic type
systems. *Calculus of Variations and Partial Differential Equations*, 4 (1996),
no.4, 341-367 (with L. B. Mou).
- [3] Partial regularity for weak heat flows into Riemannian homogeneous spaces.
Communication in Partial Differential Equations, 21 (1996), no. 5-6, 735-761
(with Y. M. Chen).
- [2] Bubbling phenomena of certain Palais-Smale sequences from surfaces to general
targets. *Houston Journal of Mathematics*, 22 (1996), no. 3, 559-590.
- [1] Compactness properties of weakly p-harmonic maps into homogeneous spaces.
Indiana University Mathematics Journal, 44 (1995), no. 1, 87-113 (with T. Toro).