Publications and Preprints

Glen Wheeler

November 2024

1 References

- Ben Andrews, Andrew Holder, James McCoy, Glen Wheeler, Valentina-Mira Wheeler, and Graham Williams. Curvature contraction of convex hypersurfaces by nonsmooth speeds. Journal für die reine und angewandte Mathematik (Crelles Journal), 2017(727):169–190, 2017.
- [2] Ben Andrews, James McCoy, Glen Wheeler, and Valentina-Mira Wheeler. Closed ideal planar curves. Geometry & Topology, 24(2):1019–1049, 2020.
- [3] Yann Bernard, Glen Wheeler, and Valentina-Mira Wheeler. Rigidity and stability of spheres in the helfrich model. *Interfaces and Free Boundaries*, 19(4):495–523, 2018.
- [4] Yann Bernard, Glen Wheeler, and Valentina-Mira Wheeler. Concentration-compactness and finite-time singularities for chen's flow. J. Math. Sci. Univ. Tokyo, 26:55–139, 2019.
- [5] Yann Bernard, Glen Wheeler, and Valentina-Mira Wheeler. Analysis of the inhomogeneous willmore equation. Annales de l'Institut Henri Poincaré C, 41(1):129–158, 2023.
- [6] Martin W Bunder, Keith P Tognetti, and Glen E Wheeler. On binary reflected gray codes and functions. *Discrete Mathematics*, 308(9):1690–1700, 2008.
- [7] MK Cooper, Glen Wheeler, and V-M Wheeler. Theory and numerics for chen's flow of curves. Journal of Differential Equations, 362:1–51, 2023.
- [8] Anna Dall'Acqua, Klaus Deckelnick, and Glen Wheeler. Unstable willmore surfaces of revolution subject to natural boundary conditions. *Calculus of Variations and Partial Differential Equations*, 48:293–313, 2013.
- [9] Bonnie Amelia Dean, Trish Mundy, Oriana Price, Meredith A Kennedy, Glen Wheeler, Lynn Sheridan, and Loretta Iskra. Resourcing and recognition: Academics' perceptions of challenges experienced embedding work-integrated learning in the curriculum. *International Journal on Work Integrated Learning*, 2023.
- [10] Serena Dipierro, Enrico Valdinoci, Glen Wheeler, and Valentina-Mira Wheeler. Existence theory for a bushfire equation. arXiv preprint arXiv:2402.15762, 2024.
- [11] Serena Dipierro, Enrico Valdinoci, Glen Wheeler, and Valentina-Mira Wheeler. A simple but effective bushfire model: analysis and real-time simulations. SIAM Journal on Applied Mathematics, 84(4):1504–1514, 2024.

- [12] Jérôme Droniou, Muhammad Ilyas, Bishnu P Lamichhane, and Glen E Wheeler. A mixed finite element method for a sixth-order elliptic problem. *IMA Journal of Numerical Analysis*, 39(1):374–397, 2019.
- [13] Gregory Drugan, Hojoo Lee, and Glen Wheeler. Solitons for the inverse mean curvature flow. Pacific Journal of Mathematics, 284(2):309–326, 2016.
- [14] Maureen Edwards, Alexander Gerhardt-Bourke, James McCoy, Glen Wheeler, and Valentina-Mira Wheeler. The shrinking figure eight and other solitons for the curve diffusion flow. *The Mechanics of Ribbons and Möbius Bands*, pages 191–211, 2016.
- [15] Shuhui He, Glen Wheeler, and Valentina-Mira Wheeler. On a curvature flow model for embryonic epidermal wound healing. *Nonlinear Analysis*, 189:111581, 2019.
- [16] Kwok-Kun Kwong, Yong Wei, Glen Wheeler, and Valentina-Mira Wheeler. On an inverse curvature flow in two-dimensional space forms. *Mathematische Annalen*, 384(1):1–24, 2022.
- [17] James McCoy, Scott Parkins, and Glen Wheeler. The geometric triharmonic heat flow of immersed surfaces near spheres. *Nonlinear Analysis*, 161:44–86, 2017.
- [18] James McCoy and Glen Wheeler. A classification theorem for helfrich surfaces. Mathematische Annalen, 357:1485–1508, 2013.
- [19] James McCoy and Glen Wheeler. Finite time singularities for the locally constrained willmore flow of surfaces. *Communications in Analysis and Geometry*, 24(4):843–886, 2016.
- [20] James McCoy and Glen Wheeler. A rigidity theorem for ideal surfaces with flat boundary. Annals of Global Analysis and Geometry, 57(1):1–13, 2020.
- [21] James McCoy, Glen Wheeler, and Graham Williams. Lifespan theorem for constrained surface diffusion flows. *Mathematische Zeitschrift*, 269(1):147–178, 2011.
- [22] James McCoy, Glen Wheeler, and Yuhan Wu. Evolution of closed curves by length-constrained curve diffusion. Proceedings of the American Mathematical Society, 147(8):3493–3506, 2019.
- [23] James McCoy, Glen Wheeler, and Yuhan Wu. A sixth order curvature flow of plane curves with boundary conditions. 2017 MATRIX Annals, pages 213–221, 2019.
- [24] James McCoy, Glen Wheeler, and Yuhan Wu. A sixth order flow of plane curves with boundary conditions. *Tohoku Mathematical Journal*, 72(3):379–393, 2020.
- [25] James McCoy, Glen Wheeler, and Yuhan Wu. High order curvature flows of plane curves with generalised neumann boundary conditions. Advances in Calculus of Variations, 15(3):497–513, 2022.
- [26] James A McCoy, Phil Schrader, and Glen Wheeler. Representation formulae for higher order curvature flows. *Journal of Differential Equations*, 344:1–43, 2023.
- [27] James A Mccoy, Glen E Wheeler, and Yuhan Wu. A length-constrained ideal curve flow. The Quarterly Journal of Mathematics, 73(2):685–699, 2022.

- [28] Tatsuya Miura and Glen Wheeler. The free elastic flow for closed planar curves. arXiv preprint arXiv:2404.12619, 2024.
- [29] Tatsuya Miura and Glen Wheeler. Uniqueness and minimality of euler's elastica with monotone curvature. arXiv preprint arXiv:2402.12771, 2024.
- [30] Shinya Okabe, Paola Pozzi, and Glen Wheeler. A gradient flow for the p-elastic energy defined on closed planar curves. *Mathematische Annalen*, 378(1):777–828, 2020.
- [31] Shinya Okabe, Philip Schrader, Valentina Wheeler, and Glen Wheeler. A sobolev gradient flow for the area-normalised dirichlet energy of H^1 maps. arXiv preprint arXiv:2310.05459, 2023.
- [32] Shinya Okabe and Glen Wheeler. The *p*-elastic flow for planar closed curves with constant parametrization. Journal de Mathématiques Pures et Appliquées, 173:1–42, 2023.
- [33] Lachlann O'Donnell, Glen Wheeler, and Valentina-Mira Wheeler. The gradient flow for entropy on closed planar curves. Archive for Rational Mechanics and Analysis, 248(4):68, 2024.
- [34] Scott Parkins and Glen Wheeler. The polyharmonic heat flow of closed plane curves. Journal of Mathematical Analysis and Applications, 439(2):608–633, 2016.
- [35] Scott Parkins and Glen Wheeler. The anisotropic polyharmonic curve flow for closed plane curves. Calculus of Variations and Partial Differential Equations, 58(2):70, 2019.
- [36] Piotr Rybka and Glen Wheeler. Convergence of solutions to a convective cahn-hilliard-type equation of the sixth order in case of small deposition rates. *SIAM Journal on Mathematical Analysis*, 55(5):5823–5861, 2023.
- [37] Piotr Rybka and Glen Wheeler. Complete classification of solitons for the surface diffusion flow of entire graphs. arXiv preprint arXiv:2407.13250, 2024.
- [38] Philip Schrader, Glen Wheeler, and Valentina-Mira Wheeler. On the $H^1(ds^{\gamma})$ -gradient flow for the length functional. The Journal of geometric analysis, 33(9):297, 2023.
- [39] JJ Sharples, IN Towers, G Wheeler, Valentina-Mira Wheeler, and JA McCoy. Modelling fire line merging using plane curature flow. *MODSIM*, 2013.
- [40] Miles Simon and Glen Wheeler. Some local estimates and a uniqueness result for the entire biharmonic heat equation. Advances in Calculus of Variations, 9(1):77–99, 2016.
- [41] Glen Wheeler. Shi's local estimates. *Oberwolfach Reports*, 2008.
- [42] Glen Wheeler. Fourth order geometric evolution equations. Bulletin of the Australian Mathematical Society, 82(3):523–524, 2010.
- [43] Glen Wheeler. Lifespan theorem for simple constrained surface diffusion flows. Journal of mathematical analysis and applications, 375(2):685–698, 2011.
- [44] Glen Wheeler. On the curve diffusion flow of closed plane curves. Annali di Matematica Pura ed Applicata, pages 1–20, 2012.

- [45] Glen Wheeler. Surface diffusion flow near spheres. Calculus of Variations and Partial Differential Equations, 44(1):131–151, 2012.
- [46] Glen Wheeler. Chen's conjecture and ε -superbiharmonic submanifolds of Riemannian manifolds. International Journal of Mathematics, 24(04):1350028, 2013.
- [47] Glen Wheeler. Gap phenomena for a class of fourth-order geometric differential operators on surfaces with boundary. Proceedings of the American Mathematical Society, 143(4):1719–1737, 2015.
- [48] Glen Wheeler. Global analysis of the generalised Helfrich flow of closed curves immersed in \mathbb{R}^n . Transactions of the American Mathematical Society, 367(4):2263–2300, 2015.
- [49] Glen Wheeler. Convergence for global curve diffusion flows. *Mathematics In Engineering*, 4(1):1, 2021.
- [50] Glen Wheeler and Valentina-Mira Wheeler. Mean curvature flow with free boundary outside a hypersphere. Transactions of the American Mathematical Society, 369(12):8319–8342, 2017.
- [51] Glen Wheeler and Valentina-Mira Wheeler. Minimal hypersurfaces in the ball with free boundary. Differential Geometry and its Applications, 62:120–127, 2019.
- [52] Glen Wheeler and Valentina-Mira Wheeler. Mean curvature flow with free boundary-type 2 singularities. *Mathematische Nachrichten*, 293(4):794-813, 2020.
- [53] Glen Wheeler and Valentina-Mira Wheeler. Curve diffusion and straightening flows on parallel lines. Communications in Analysis and Geometry, 2024.
- [54] Glen E Wheeler, Reihaneh Safavi-Naini, and Nicholas Paul Sheppard. Weighted segmented digital watermarking. In Digital Watermarking: Third International Workshop, IWDW 2004, Seoul, South Korea, October 30-November 1, 2004, Revised Selected Papers 3, pages 89–100. Springer Berlin Heidelberg, 2005.
- [55] Valentina-Mira Wheeler, James A McCoy, Glen Wheeler, and JJ Sharples. Curvature flows and barriers in fire front modelling. *MODSIM*, 2013.
- [56] VM Wheeler, GE Wheeler, James A McCoy, and Jason J Sharples. Modelling dynamic bushfire spread: perspectives from the theory of curvature flow. In *MODSIM2015*, 21st International Congress on Modelling and Simulation, pages 319–325, 2015.