Luca Scarpa, PhD – Publications

Published and accepted papers

1. L. Scarpa.
A doubly nonlinear evolution problem related to a model for microwave heating.
Adv. Math. Sci. Appl. 24 (2014), no. 2, 251–275

2. P. Colli, L. Scarpa.
Existence of solutions for a model of microwave heating.
Discrete Contin. Dyn. Syst. Ser. A 36 (2016), no. 6, 3011–3034. DOI: 10.3934/dcds.2016.36.3011

3. P. Colli, L. Scarpa.
From the viscous Cahn-Hilliard equation to a regularized forward-backward parabolic equation.
Asympt. Anal. 99 (2016), no. 3–4, 183–205. DOI: 10.3233/ASY-161380

4. L. Scarpa.
Well-posedness for a class of doubly nonlinear stochastic PDEs of divergence type.
J. Differential Equations 263 (2017), no. 4, 2113–2156. DOI: 10.1016/j.jde.2017.03.041

5. L. Scarpa.
On the stochastic Cahn-Hilliard equation with a singular double-well potential.
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6. C. Marinelli, L. Scarpa.
A variational approach to dissipative SPDEs with singular drift.
Ann. Probab. 46 (2018), no. 3, 1455–1497. DOI: 10.1214/17-AOP1207

7. E. Bonetti, P. Colli, L. Scarpa, G. Tomassetti.
A doubly nonlinear Cahn-Hilliard system with nonlinear viscosity.
Commun. Pure Appl. Anal. 17 (2018), no. 3, 1001–1022. DOI: 10.3934/cpaa.2018049

8. C. Marinelli, L. Scarpa.
Strong solutions to SPDEs with monotone drift in divergence form.
Stoch. Partial Differ. Equ. Anal. Comput. 6 (2018), no. 3, 364–396. DOI: 10.1007/s40072-018-0111-3

9. C. Marinelli, L. Scarpa.
A note on doubly nonlinear SPDEs with singular drift in divergence form.
Accad. Naz. Lincei Rend. Lincei Mat. Appl. 29 (2018), no. 4, 619–633. DOI: 10.4171/RLM/825

10. L. Scarpa.
Existence and uniqueness of solutions to singular Cahn-Hilliard equations with nonlinear viscosity terms and dynamic boundary conditions.
J. Math. Anal. Appl. 469 (2019), no. 2, 730–764. DOI: 10.1016/j.jmaa.2018.09.034

11. C. Orrieri, L. Scarpa.
Singular stochastic Allen-Cahn equations with dynamic boundary conditions.
J. Differential Equations 266 (2019), no. 8, 4624–4667. DOI: 10.1016/j.jde.2018.10.007

12. S. Melchionna, H. Ranetbauer, L. Scarpa, L. Trussardi.
From nonlocal to local Cahn-Hilliard equation.
Adv. Math. Sci. Appl. 28 (2019), no. 1, 197–211.

13. L. Scarpa.
Optimal distributed control of a stochastic Cahn-Hilliard equation.
SIAM J. Control Optim. 57 (2019), no. 5, 3571–3602. DOI: 10.1137/18M1222223

14. C. Marinelli, L. Scarpa.
Ergodicity and Kolmogorov equations for dissipative SPDEs with singular drift: a variational approach.
Potential Anal. 52 (2020), no. 1, 69–103. DOI: 10.1007/s11118-018-9731-5

15. E. Bonetti, P. Colli, L. Scarpa, G. Tomassetti.
Bounded solutions and their asymptotics for a doubly nonlinear Cahn-Hilliard system.
Calc. Var. Partial Differential Equations 59 (2020), no. 2, Paper no. 88, 25 pp. DOI: 10.1007/s00526-020-1715-9

16. E. Davoli, H. Ranetbauer, L. Scarpa, L. Trussardi.
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Ann. Inst. H. Poincaré Anal. Non Linéaire 37 (2020), no. 3, 627–651. DOI: 10.1016/j.anihpc.2019.10.002

17. L. Scarpa, U. Stefanelli.
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18. C. Marinelli, L. Scarpa.
Fréchet differentiability of mild solutions to SPDEs with respect to the initial datum.
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19. C. Marinelli, L. Scarpa.
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20. L. Scarpa, U. Stefanelli.
An order approach to SPDEs with antimonotone terms.
Stoch. Partial Differ. Equ. Anal. Comput. 8 (2020), no. 4, 819–832. DOI: 10.1007/s40072-019-00161-7

21. C. Orrieri, E. Rocca, L. Scarpa.
Optimal control of stochastic phase-field models related to tumor growth.
ESAIM Control Optim. Calc. Var. 26 (2020), Paper No. 104, 46 pp. DOI: 10.1051/cocv/2020022

22. L. Scarpa, U. Stefanelli.
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23. E. Davoli, L. Scarpa, L. Trussardi.
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24. C. Marinelli, L. Scarpa, U. Stefanelli.
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25. L. Scarpa.
Analysis and optimal velocity control of a stochastic convective Cahn-Hilliard equation.
J. Nonlinear Sci. 31 (2021), no. 2, 45. DOI: 10.1007/s00332-021-09702-8

26. E. Davoli, L. Scarpa, L. Trussardi.
Local asymptotics for nonlocal convective Cahn-Hilliard equations with $W^{1,1}$ kernel and singular potential.
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27. L. Scarpa, A. Signori.
On a class of non-local phase-field models for tumor growth with possibly singular potentials, chemotaxis, and active transport.
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28. L. Scarpa.
The stochastic Cahn-Hilliard equation with degenerate mobility and logarithmic potential.
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29. L. Scarpa.
The stochastic viscous Cahn-Hilliard equation: well-posedness, regularity and vanishing viscosity limit.
Appl. Math. Optim. 84 (2021), no. 1, 487–533. DOI: 10.1007/s00245-020-09652-9

30. C. Marinelli, L. Scarpa.
Well-posedness of monotone semilinear SPDEs with semimartingale noise.
Séminarie de Probabilités (to appear). arXiv:1805.07562

31. A. Menovschikov, A. Molchanova, L. Scarpa.
An extended variational theory for nonlinear evolution equations via modular spaces.
SIAM J. Math. Anal. (to appear). arXiv:2012.05518

Submitted papers

32. C. Marinelli, L. Scarpa.
On the positivity of local mild solutions to stochastic evolution equations.
Submitted (2019), arXiv:1912.13259

33. L. Scarpa, U. Stefanelli.
Doubly nonlinear stochastic evolution equations II.
Submitted (2020), arXiv:2009.08209

34. E. Rocca, L. Scarpa, A. Signori.
Parameter identification for nonlocal phase field models for tumor growth via optimal control and asymptotic analysis.
Submitted (2020), arXiv:2009.11159

35. P. Colli, T. Fukao, L. Scarpa.
The Cahn-Hilliard equation with forward-backward dynamic boundary condition via vanishing viscosity.
Submitted (2021), arXiv:2106.01010

Proceedings

P1. C. Marinelli, L. Scarpa.
On the well-posedness of SPDEs with singular drift in divergence form.
Stochastic Partial Differential Equations and Related Fields,
(A. Eberle, M. Grothaus, W. Hoh, M. Kassmann, W. Stannat, and G. Trutnau, eds.),
Springer International Publishing (2018), 225-235. DOI: 10.1007/978-3-319-74929-7_12

Theses

T1. L. Scarpa.
Funzioni di variabile complessa e applicazioni.
Bachelor's Degree Thesis (2013)

T2. L. Scarpa.
Global existence results for PDE problems arising from microwave heating.
Master's Degree Thesis (2015)

T3. L. Scarpa.
A variational approach to some classes of singular stochastic PDEs.
PhD Thesis (2018)