

Publications by Giulio Schimperna

Journal articles – accepted works

- [1] G. Schimperna, *Weak solution to a phase-field transmission problem in a concentrated capacity*, Math. Methods Appl. Sci., **22** (1999), 1235–1254.
- [2] G. Schimperna, *Some convergence results for a class of nonlinear phase-field evolution equations* J. Math. Anal. Appl., **250** (2000), 406–434.
- [3] G. Schimperna, *Singular limit of a transmission problem for the parabolic phase-field model*, Appl. Math., **45** (2000), 217–238.
- [4] G. Schimperna, *Abstract approach to evolution equations of phase-field type and applications*, J. Differential Equations, **164** (2000), 395–430.
- [5] F. Luterotti, G. Schimperna, U. Stefanelli, *Existence result for a nonlinear model related to irreversible phase changes*, M³AS – Math. Models Methods Appl. Sci., **11** (2001), 808–825.
- [6] P. Colli, G. Gilardi, M. Grasselli, G. Schimperna, *The conserved phase-field system with memory*, Adv. Math. Sci. Appl., **11** (2001), 265–291.
- [7] P. Colli, G. Gilardi, M. Grasselli, G. Schimperna, *Global existence for the conserved phase field model with memory and quadratic nonlinearity*, Portugal. Math., **58** (2001), 159–170.
- [8] P. Colli, F. Luterotti, G. Schimperna, U. Stefanelli, *Global existence for a class of generalized systems for irreversible phase changes*, NoDEA – Nonlinear Differential Equations Appl., **9** (2002), 255–276.
- [9] F. Luterotti, G. Schimperna, U. Stefanelli, *Global solution to a phase field model with irreversible and constrained phase evolution*, Quart. Appl. Math., **60** (2002), 301–316.
- [10] E. Bonetti, P. Colli, W. Dreyer, G. Gilardi, G. Schimperna, J. Sprekels, *On a model for phase separation in binary alloys driven by mechanical effects*, Phys. D, **165** (2002), 48–65.
- [11] Ph. Laurençot, G. Schimperna, U. Stefanelli, *Global existence of a strong solution to the one-dimensional full model for irreversible phase transitions*, J. Math. Anal. Appl., **271** (2002), 426–442.
- [12] G. Savaré, G. Schimperna, *Domain perturbations and estimates for the solutions of second order elliptic equations*, J. Math. Pures Appl., **81** (2002), 1071–1112.
- [13] E. Bonetti, W. Dreyer, G. Schimperna, *Global solution to a generalized Cahn-Hilliard equation with viscosity*, Adv. Differential Equations, **8** (2003), 231–256.
- [14] E. Rocca, G. Schimperna, *The conserved Penrose-Fife system with Fourier heat flux law*, Nonlinear Anal., **53** (2003), 1089–1100.

- [15] F. Luterotti, G. Schimperna, U. Stefanelli, *A generalized phase relaxation model with hysteresis*, *Nonlinear Anal.*, **55** (2003), 381–398.
- [16] E. Rocca, G. Schimperna, *Singular limit of a conserved Penrose-Fife model with special heat flux law and memory effects*, *Asymptot. Anal.*, **36** (2003), 285–301.
- [17] D. Kessler, J.-F. Scheid, G. Schimperna, U. Stefanelli, *Study of a system for the isothermal separation of components in a binary alloy with change of phase*, *IMA J. Appl. Math.*, **69** (2004), 233–257.
- [18] E. Bonetti, G. Schimperna, *Local existence for Frémond’s model of damage in elastic materials*, *Contin. Mech. Thermodyn.*, **16** (2004), 319–335.
- [19] P. Colli, G. Gilardi, E. Rocca, G. Schimperna, *On a Penrose-Fife phase-field model with non-homogeneous Neumann boundary conditions for the temperature*, *Differential Integral Equations*, **17** (2004), 511–534.
- [20] E. Rocca, G. Schimperna, *Universal attractor for a Penrose-Fife system with special heat flux law*, *Mediterr. J. Math.*, **1** (2004), 109–121.
- [21] G. Schimperna, U. Stefanelli, *A quasi-stationary phase field model with micro-movements*, *Appl. Math. Optim.*, **50** (2004), 67–86.
- [22] E. Rocca, G. Schimperna, *Universal attractor for some singular phase transition systems*, *Phys. D*, **192** (2004), 279–307.
- [23] E. Feireisl, G. Schimperna, *Large time behaviour of solutions to Penrose-Fife phase change models*, *Math. Methods Appl. Sci.*, **28** (2005), 2117–2132.
- [24] A. Miranville, G. Schimperna, *Nonisothermal phase separation based on a microforce balance*, *Discrete Contin. Dyn. Syst. Ser. B*, **5** (2005), 753–768.
- [25] E. Bonetti, G. Schimperna, A. Segatti, *On a doubly nonlinear model for the evolution of damaging in viscoelastic materials*, *J. Differential Equations*, **218** (2005), 91–116.
- [26] A. Miranville, G. Schimperna, *Global solution to a phase transition model based on a microforce balance*, *J. Evol. Equ.*, **5** (2005), 253–276.
- [27] A. Lorenzi, E. Rocca, G. Schimperna, *Direct and inverse problems for a parabolic integro-differential system of Caginalp type*, *Adv. Math. Sci. Appl.*, **15** (2005), 227–263.
- [28] M. Grasselli, H. Petzeltová, G. Schimperna, *Long time behavior of solutions to the Caginalp system with singular potential*, *Z. Anal. Anwend.*, **25** (2006), 51–72.
- [29] E. Rocca, G. Schimperna, *Global attractor for a parabolic-hyperbolic Penrose-Fife phase field system*, *Discrete Contin. Dyn. Syst.*, **15** (2006), 1193–1214.
- [30] M. Grasselli, H. Petzeltová, G. Schimperna, *Convergence to stationary solutions for a parabolic-hyperbolic phase-field system*, *Commun. Pure Appl. Anal.*, **5** (2006), 827–838.
- [31] G. Schimperna, U. Stefanelli, *Positivity of the temperature for phase*

transitions with micro-movements, Nonlinear Anal. Real World Appl., **8** (2007), 257–266.

[32] G. Schimperna, A. Segatti, U. Stefanelli, *Well-posedness and long-time behavior for a class of doubly nonlinear equations*, Discrete Contin. Dyn. Syst., **18** (2007), 15–38.

[33] M. Grasselli, H. Petzeltová, G. Schimperna, *Asymptotic behavior of a nonisothermal viscous Cahn-Hilliard equation with inertial term*, J. Differential Equations, **239** (2007), 38–60.

[34] M. Grasselli, H. Petzeltová, G. Schimperna, *A nonlocal phase-field system with inertial term*, Quart. Appl. Math., **65** (2007), 451–469.

[35] G. Schimperna, *Global attractors for Cahn-Hilliard equations with non-constant mobility*, Nonlinearity **20** (2007), 2365–2387.

[36] G. Schimperna, A. Segatti, *Attractors for the semiflow associated with a class of doubly nonlinear parabolic equations*, Asymptot. Anal., **56** (2008), 61–86.

[37] G. Gilardi, A. Miranville, G. Schimperna, *On the Cahn-Hilliard equation with irregular potentials and dynamic boundary conditions*, Comm. Pure Appl. Anal., to appear.

[38] A. Miranville, G. Schimperna, *Generalized Cahn-Hilliard equations for multicomponent alloys*, Adv. Math. Sci. Appl., to appear.

[39] G. Schimperna, *Global and exponential attractors for the Penrose-Fife system*, M³AS – Math. Models Methods Appl. Sci., to appear.

[40] P. Colli, D. Hilhorst, F. Issard-Roch, G. Schimperna, *Long time convergence for a class of variational phase field models*, Discrete Contin. Dyn. Syst., to appear.

Preprints – submitted works

[a] M. Grasselli, G. Schimperna, S. Zelik, *On the 2D Cahn-Hilliard equation with inertial term*, submitted.

[b] M. Grasselli, G. Schimperna, A. Segatti, S. Zelik, *On the 3D Cahn-Hilliard equation with inertial term*, submitted.

Papers published in refereed Proceedings:

[i] G. Schimperna, *Convergence of phase-field equations to the Stefan model*, Proceedings of the PCC99 ESF-AMIF Workshop (Warsaw, Poland, 24–27/6/1999), T. A. Kowalewski, F. Stella, J. Banaszek, J. Szmyd editors, IPPT-PAN Reports, **5** (1999), 131–134.

[ii] J.-F. Scheid, G. Schimperna, *Regularity and uniqueness results for a phase change problem in binary alloys*, Proceedings of the “Fourth European Conference on Elliptic and Parabolic Problems - Rolduc and Gaeta 2001”, World Sci. Publishing, River Edge, NJ, 2002, 475–484.

[iii] F. Luterotti, G. Schimperna, U. Stefanelli, *Local solution to Fremond's full model for irreversible phase transitions*, Proc. "Modelli Matematici e Problemi Analitici per Materiali Speciali", Cortona, 25-29 giugno 2001, "Mathematical Models and Methods for Smart Materials", M. Fabrizio, B. Lazzari & A. Morro (eds.), Ser. Adv. Math. Appl. Sci. 62, World Scientific Publishing Co. 2002, 323–328.

[iv] F. Luterotti, G. Schimperna, U. Stefanelli, *Existence results for a phase transition model based on microscopic movements*, Differential equations: inverse and direct problems, 245–263, Lect. Notes Pure Appl. Math., 251, Chapman & Hall/CRC, Boca Raton, FL, 2006.

PhD. Dissertation

[D] G. Schimperna, *Transmission Problems for Nonlinear Parabolic Systems of Phase-field Type*, PhD. Thesis, University of Pavia, 2000.