

Paolo Cermelli. Curriculum

- Laurea in Matematica Università di Torino (110/lode), anno 1987.
- Dottorato di Ricerca in Matematica, Università di Torino (1992), con relatore M.E. Gurtin (Carnegie Mellon University, Pittsburgh, PA)
- (1992): Post Doc presso l'Istituto Nazionale di Alta Matematica;
- (1993): Post Doc presso il Center for Nonlinear Analysis, Carnegie Mellon University, Pittsburgh Pa;
- (1993-2000) Ricercatore Università del Piemonte Orientale;
- (2000-oggi) Professore associato all' Università di Torino;
- (1994) Short-term research fellow presso il Center for the Mathematical Sciences, University of Wisconsin, Madison, Wi;

Curriculum scientifico:

Visitor presso:

- Dept. Mathematical Sciences, Carnegie Mellon University, Pittsburgh, PA;
- Center for the Mathematical Sciences, University of Wisconsin, Madison, WI
- Max Planck Institut, Leipzig, De.,
- Institute for the Mathematics and its Applications, Minneapolis, USA;
- Department of Mechanical Engineering, Washington University, St. Louis, MI
- Laboratoire de Mecanique des Solides , Ecole Polytechnique, Paris.
- Department of Theoretical and Applied Mechanics, University of Illinois, Urbana-Champaign IL
- School of Mathematical Sciences, University of Nottingham UK,
- Department of Mathematics, University of Kentucky, Lexington, KY

Organizzazione convegni e scuole:

- convegno "Geometry and Microstructures", Torino, 26-28 Ottobre 2000;
- scuola "Selected Issues In the Mechanics of Crystalline Solids", Padova, 2-5 Ottobre 2000.

Referee per le seguenti riviste internazionali

- International Journal of Solids and Structures,
- Mathematical Models and Methods in Applied Sciences,
- Proceedings of the Royal Society of London, A,
- Journal of Elasticity,
- Continuum Mechanics and Thermodynamics,
- Journal of the Mechanics and Physics of Solids,
- Physica A
- Journal of Colloid and Interface Science,
- Philosophical Magazine
- Theoretical and Computational Fluid Dynamics

Associate Editor di Continuum Mechanics and Thermodynamics

Coordinatore scientifico dell'Unità di Torino dei progetti di ricerca PRIN 2002, 2005, 2007 (Modelli Matematici per la Scienza dei Materiali).

- autore di 2 pubblicazioni a carattere didattico:

i) CERMELLI P.; GUANA F. Modelli matematici ed equazioni alle derivate parziali. Quaderni didattici del Dipartimento di Matematica dell'Università di Torino n. 12

ii) CERMELLI P.; CASTELLANO S. Modelli matematici per lo studio del comportamento. Pubblicato on line sul sito web del Dipartimento di Matematica

- Interessi di ricerca: difetti e loro influenza sul comportamento meccanico dei materiali, film sottili, plasticità cristallina. Evoluzione della comunicazione su modelli di automi cellulari su reticoli e su grafi. Omogeneizzazione per le equazioni di evoluzione per automi cellulari su reticoli. Problemi matematici in evoluzione della comunicazione e del comportamento animale e dell'uomo. Cristallografia dei capsidi virali.

Lavori Scientifici:

- [1] CAMPERIO CIANI A.; CERMELLI P.; ZANZOTTO G. (2008). Sexually Antagonistic Selection in Human Male Homosexuality. PLoS ONE 3(6): e2282. doi: 10.1371 / journal.pone.0002282
- [2] GUALLA F.; CERMELLI P.; CASTELLANO S. (2008). Is there a role for amplifiers in sexual selection? JOURNAL OF THEORETICAL BIOLOGY,†vol. 252, p. 255-271
- [3] CERMELLI P.; A.J. DI SCALA (2007). Constant-angle surfaces in liquid crystals. PHILOSOPHICAL MAGAZINE, vol. 87; p. 1871-1888
- [4] CERMELLI P.; ARMANO T (2007). Fine cross slip of a screw dislocation in anti-plane shear. RENDICONTI DEL SEMINARIO MATEMATICO, vol. 65; p. 249-260
- [5] CERMELLI P.; JABBOUR M. (2007). Possible mechanism for the onset of step-bunching instabilities during the epitaxy of single-species crystalline films. PHYSICAL REVIEW. B, CONDENSED MATTER AND MATERIALS PHYSICS, vol. 75; p. 165409.
- [6] ANDERSON D.M.; CERMELLI P.; FRIED E.; GURTIN M.E.; MCFADDEN G.B. (2007). General dynamical sharp-interface conditions for phase transformations in viscous heat-conducting fluids. JOURNAL OF FLUID MECHANICS, vol. 581; p. 323-370
- [7] CASTELLANO S; CERMELLI P. (2006). Reconciling Sexual Selection to Species Recognition: A Process-based Model of Mating Decision. JOURNAL OF THEORETICAL BIOLOGY, vol. 242; p. 529-538
- [8] CERMELLI P.; PARRY G.P (2006). The structure of uniform discrete defective lattices. CONTINUUM MECHANICS AND THERMODYNAMICS, vol. 18; p. 47-71
- [9] CERMELLI P.; FRIED E; GURTIN M.E (2005). Transport relations for surface integrals arising in the formulation of balance laws or evolving fluid interfaces. JOURNAL OF FLUID MECHANICS, vol. 544; p. 339-351
- [10] CERMELLI P.; JABBOUR; M.E (2005). Multispecies Epitaxial Growth on Stepped Surfaces in the Presence of Chemical Reactions and Diffusion. PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON. SERIES A, vol. 461; p. 3483-3504
- [11] CERMELLI P.; LEONI; G (2005). Renormalized Energy and Forces on Dislocations. SIAM JOURNAL ON MATHEMATICAL ANALYSIS, vol. 37; p. 1131-1160
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- [14] BORTOLONI L; CERMELLI P. (2004). Dislocation patterns and work-hardening in crystalline plasticity. JOURNAL OF ELASTICITY, vol. 76; p. 113-138

- [15] CERMELLI P.; FRIED E.; GURTIN M. (2004). Sharp-Interface Nematic-Isotropic Phase Transitions without Flow. ARCHIVE FOR RATIONAL MECHANICS AND ANALYSIS, vol. 174; p. 151-178
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- [25] CERMELLI P.; PASTRONE F. (2001). A simple approach to the problem of defect localization in an elastic body. INTERNATIONAL JOURNAL OF NON-LINEAR MECHANICS, vol. 36; p. 515-521
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- [47] CERMELLI P.; PASTRONE F. (1996). Homotopy groups and defects in elastic solids. In: BATRA R.C.; BEATTY M.F.. Contemporary Research in the Mechanics and Mathematics of Materials. , BARCELONA: CIMNE
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