

CURRICULUM VITAE

GIOVANNI BELLETTINI

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Scopus: Documents 106, h-index 23, n. citations 1784, citation by 1250 documents

EDUCAZIONE

Laurea in Matematica, Università di Pisa, 21 Novembre 1988.
Ph.D. in Functional Analysis and Applications, SISSA, Trieste, 28 Ottobre 1993.

POSIZIONI ATTUALMENTE RICOPERTE

Professore ordinario di Analisi Matematica, Università di Siena, 1 Febbraio 2017-
ICTP consultant: 2012-
associato LNF-INFN: 1 Ottobre 2004-
Membro del Collegio dei Docenti della scuola di dottorato, Università di Siena, Luglio 2017-.

POSIZIONI PRECEDENTI

Ricercatore, Università di Bologna, 1 Luglio 1991 - 31 Ottobre 1994.
Ricercatore, Università di Pisa, 1 Novembre 1994 - 31 Ottobre 1998.
Professore associate, Università di Roma "Tor Vergata", 1 Novembre 1998 - 31 Ottobre 2001.
Professore ordinario di Analisi Matematica, Università di Roma "Tor Vergata", 1 Novembre 2001 - 31 Gennaio 2017.

Diploma di pianoforte al Conservatorio Musicale pareggiato L. Boccherini, Lucca, 1988.
Conoscenza delle lingue: italiano (lingua madre), inglese (buona), francese (discreta), spagnolo (principiante).

1. ATTIVITÀ DI RICERCA

- **Equazioni geometriche di evoluzione.** Moto per curvatura media. Barriere, fattening, movimenti minimizzanti, approssimazioni di ordine alto. Movimenti per curvatura media anisotropa e cristallina. Flusso secondo la variazione totale. Evoluzione di partizioni. Il libro G. Bellettini: *Lecture Notes on Mean Curvature flow, Barriers and Singular Perturbations, Scuola Normale Superiore, Pisa 2013*, pp. xviii-325 (vedi la lista delle pubblicazioni), è una introduzione all'evoluzione di una ipersuperficie secondo la curvatura media. Lo scopo del libro è quello di dare una introduzione al moto per curvatura, evitando di usare, per quanto possibile, il linguaggio delle parametrizzazioni. Sono descritti alcuni aspetti rilevanti del moto per curvatura media, come ad esempio il ruolo della funzione distanza con segno, e il principio di confronto, e il loro uso nella teoria delle barriere. Vengono inoltre discussi alcuni esempi di singolarità del moto. Negli ultimi capitoli, facendo uso di una espansione asintotica formale, si dimostra un teorema di convergenza delle soluzioni dell'equazione di Allen-Cahn parabolica, al moto per curvatura media, per tempi sufficientemente piccoli. Si fornisce inoltre una stima di errore.

- **Calculus of variations.** Superfici di area minima, superfici a curvatura media prescritta, e loro approssimazione variazionale e numerica. Rilassamento del funzionale dell'area per grafici di mappa, in dimensione due e codimensione due, e relazioni con il problema di Plateau. Spazi di rivestimento e problema di Plateau. Problemi di ordine alto, e funzionale delle elastiche. Transizioni di fase e Γ -convergenza. Funzionali non locali. Applicazioni alla segmentazione di immagini.

- **Equazioni paraboliche backward-forward.** Flussi gradiente Soluzioni deboli, approssimazione del quart'ordine, discretizzazione. Il modello bidominio.

- **Equazioni iperboliche.** Leggi di conservazione scalari. Equazioni di tipo Ginzburg-Landau. Stringhe classiche relativistiche.

- **Analisi numerica.** Approssimazione alle differenze finite e agli elementi finiti di equazioni differenziali alle derivate parziali paraboliche. Γ -convergenza discreta.

- **Segmentazione di immagini.** Ricostruzione di forme tridimensionali a partire da contorni apparenti; problemi topologici e variazionali nella computer vision. Contorni apparenti e loro invarianti. Il libro di G. Bellettini, V. Beorchia, M. Paolini, F. Pasquarelli, *Shape Reconstruction from Apparent Contours. Theory and Algorithms, Computational Imaging and Vision*, Springer 2015 (see the list of publications), si occupa del problema della ricostruzione di una forma tridimensionale (non necessariamente connessa) a partire da informazioni date sul suo contorno apparente. Motivati da un modello variazionale relativo alla profondità degli oggetti in una immagine bidimensionale, e dal problema dei contorni nascosti e dalle illusioni ottiche, si analizza uno dei problemi centrali della computer vision: la ricostruzione topologica e algoritmica di una scena tridimensionale liscia a partire dalla parte visibile di un contorno apparente. Si presta particolare attenzione alla manipolazione dei contorni apparenti usando un insieme finito di mosse elementari, che corrispondono a diffeomorfismi della scena tridimensionale. Il libro fornisce anche una guida all'uso del codice software `appcontour`, scritto per la manipolazione dei contorni apparenti e dei loro invarianti.

- **Aspetti matematici della meccanica statistica:** funzionali non locali in transizioni di fase.

- **Miscellanea.** Regolarizzazione del problema dei due corpi, sistemi di PDEs, relatività generale, invarianti di superfici embedded in uno spazio euclideo tridimensionale, encyclopediae.

2. ATTIVITÀ SEMINARIALE

Conferenziere all'estero su invito. Pont á Mousson, Metz (1991, 1994), Oberwolfach (1994, 1998, 2000, 2001, 2004(2), 2006, 2007(2), 2008, 2010, 2011 (2), 2013), (2014), (2015), (2018), Berlin (1996), Freiburg (1998), Barcellona (2000), Paris (2000), Debrecen (2003), Edinburgh (2005), Lyon (2005), Roscoff (2007), Bedlewo (2007), Zürich (2007), Hausdorff Center, Bonn (2008), Max Planck Institute, Leipzig (2008), Carnegie Mellon Univ., Pittsburgh PA, USA (2009), Poros, Greece (2009), Max Planck Institute Golm, Germany (2009), Paris XI (2010), Dortmund, Germany (2011), Tuebingen, Germany (2011), Banach Center, Warsaw, Poland (2012), Chiemsee, Germany (2012), Athens, Greece (2012), ICTP (2013), Madrid (2013), Paris (IHP, 2014), Frankfurt (2015), Univ. of Sussex (UK, 2015), KTH (Stockholm, 2016), Lyon (France, 2016) Salzburg (Austria, 2016), Freiburg (Germany, 2016), Hamburg (Germany, 2018), Krakow (Poland, 2019), ESI (Wien, Austria, 2019), Steklov Institute, Moscow (2020), SIAM Conference of Mathematical Aspects of Material Science, Bilbao, online (2021), SIAM Conference Analysis PDEs (2022).

Conferenziere su invito in Italia. Trento (1990, 1991, 1992, 1993, 1994, 1996, 1999), Catania (1991), Padova (1992, 1995), Perugia (1993), Bologna (1994), Firenze (1994), Montecatini Terme (1995), Pavia (1996), Pisa (1996, 2002, 2019 (twice), 2021), Cortona (1997, 1998, 2000), Capri (1997), Scuola Normale Superiore, Pisa (1997, 2001, 2003, 2006(2), 2008, 2009, 2010, 2012, 2017 (Centro De Giorgi)), Isola d'Elba (1997), Roma (1999, 2000, 2003, 2006, 2010 (Indam)), Levico Terme (2000, 2003, 2004, 2006, 2008, 2009, 2011, 2013, 2018) Ischia (2000), L'Aquila (2002), Lecce (2003, 2004), SISSA, Trieste (2008), Vulcano (2012).

Seminari tenuti in università e centri di ricerca all'estero. Newton Institute, Cambridge (1995), University of Montpellier II (1996), University of Basel (1997), Institute Henry Poincaré, Centre Emile Borel, Paris (1998), Echole Polytechnique Federale de Lausanne (2003), Max Planck Institute in the Sciences, ETH Zürich (2004), Leipzig (2005), Max Planck Institute for Gravitational Physics, Golm (2006), University of Zürich (2007), University of Freiburg (2008), Hausdorff Center, University of Bonn (2008), Max Planck Institute in the Sciences, Leipzig (2010), Echole Polytechnique, Paris (2012), Dortmund TU (2014), NYUAD Abu Dhabi (2015), University of Wien, Austria (2018) , Univ. of Lisbon, WADE seminar 18 november 2021 (online) .

Seminari tenuti in università e centri di ricerca in Italia. University of Trento (1989, 1995, 2002, 2006), University of Milano (1993, 1997), University of Roma "Tor Vergata" (1994, 1997, 1999), University of Roma "La Sapienza" (1994, 1999, 2002, 2005, 2015 , 2019), University of Firenze (1996, 2018), University of l'Aquila (1996, 1997, 2004, 2007), Istituto per le Applicazioni del Calcolo, Roma (1999), University of Napoli (2000, 2016), University of Padova (2002), University of Bologna (2003), University of Pisa (2006), University of Trieste (2009,2020), University of Pavia (2009), University of Udine (2009), University of Brescia La Cattolica (2010, 2016), ICTP Trieste (2011, 2018, 2020), SISSA Trieste (2014), University of Bologna (2015), University of Napoli (2015), University of Trieste (2015), Collegio Fonda Trieste (2016). Univ. of Athens (2021)

Professore visitatore. Università del Maryland (Stati Uniti), Università di Montpellier II (Francia), Newton Institute (Università di Cambridge, Regno Unito), Università di Basel (Svizzera), Università di Ciudad Real (Spagna), Università di Toulon-Du Var (Francia), Max Planck Institute in the Sciences (Lipsia, Germania), Max Planck Institute for Gravitational Physics (Golm, Germania), Hausdorff Center (Università di Bonn, Germania), Università Pompeu Fabra (Barcellona, Spagna), Stoccolma, KTH (Svezia), Newton Institute (Cambridge, Regno Unito), NYUAD Abu Dhabi, Emirati Arabi, Wien University (Austria)

Consulente. Sono consulente all'ICTP: l'ICTP è una istituzione extraterritoriale dell' UNESCO, e la sua missione è la disseminazione della scienza (in particolare, fisica, matematica, e meteorologia) nel mondo, e soprattutto nei paesi in via di sviluppo.

3. ATTIVITÀ EDITORIALE E DI REFEREE

Associate Editor:

Interfaces and Free Boundaries (European Mathematical Society), 2013-;
 Geometric Flows (De Gruyter), 2014-2020;
 Rendiconti dell'Istituto di Matematica dell'Università di Trieste, 2021-.

Attività di referee: 2003: referee per lo Swedish Research Council.

2004: referee per l'award di una Senior Fellowship della Croucher Foundation (Hong Kong).

2007: membro della commissione per posto a professore ordinario in Italia.

2008: referee per una tesi di Ph.D. thesis all' Univ. della Bretagne Occidentale (France).

2009: membro di commissione di dottorato the evaluation of a Ph.D. Thesis at the Lab. J. Kuntzmann, Mathématiques Appliquées-Informatique, Univ. de Grenoble (France).

2010: membro di una commissione per professore ordinario in Italia.

2011: membro di una commissione per un posto di professore associato a Georgetown University (Usa).

2011: membro di commissione per la conferma dei posti di professore associato in Italia.

2011: membro della commissione per assegnare posizioni alla Laurea Magistrale alla SISSA/ISAS (Trieste).

2011: referee per una tesi di dottorato all' Université Pierre et Marie Curie, Parigi.

2012 Peer referee VQR for the evaluation of research programs 2004-2010.

2014: membro di commissione per la conferma delle posizioni di professore associato in Italia.

2014 Membro esterno di commissione di Ph.D in Applied Mathematics alla Scuola Internazionale Superiore di Studi Avanzati SISSA-ISAS, Trieste.

2014: membro di commissione della Laurea Magistrale alla Scuola Internazionale Superiore di Studi Avanzati SISSA-ISAS, Trieste.

2014: referee per una tesi di Ph.D. all' Univ. de la Loreine (Francia).

2015: referee per una posizione di professore W2 all' università di Hamburg (Germany).

2015: referee for a PhD thesis at the University of Ulm (Germany).

2016: referee for evaluation of two research projects for FWF Der Wissenschaftfonds (Austria).

2016: membro di una commissione di dottorato all'università di Pisa.

2016: referee per una posizione W1 position all'università di Münster (Germania).

2017: referee per una tesi di PhD all'università di Ulm (Germany).

2018: referee per un progetto di ricerca sottomesso al National Science Centre Narodowe Centrum Nauki, Polonia.

2018: valutatore per una full professorship alla National Taiwan Normal University.

2019: referee per una short-term application all' ESI (Vienna).

2019: membro di una commissione di dottorato all'università di Pisa.

2019: membro di commissione per una posizione RTDB position all'university di Siena.

2020: referee per una tesi di PhD all' università di Regensburg (Germania).

2020: referee of a PhD thesis at the University of Pisa

2021: reviewer per un Personal Research Grant, per la Israel Science Foundation (Israele).

2021: membro di commissione per una posizione RTDA position all'università di Verona.

2021: membro di commissione per una posizione RTDB position all'università di Pisa.

2022: membro di commissione per una posizione di RTDB position all'università di Siena.

2022: reviewer per la FWF Der Wissenschaftsfonds (Austria)

2022: reviewer per la Deutsche Forschungsgemeinschaft (German Research Foundation)

2022 Membro esterno di commissione per la difesa di due tesi di PhD, alla Scuola Internazionale Superiore di Studi Avanzati SISSA-ISAS, Trieste.

2023: reviewer per la Deutsche Forschungsgemeinschaft (German Research Foundation)

Referee per le seguenti riviste scientifiche: Adv. Calc. Var., Ann. Inst. H. Poincaré Anal. Non Lin., Annali Mat. Pura Appl., Annali Sc. Norm. Sup. Pisa, Arch. Ration. Mech. Anal., Atti Accad. dei Lincei, Bull. London Math. Soc., Calc. Var. Partial Differential Equations, Comm. Cont. Math., Comm. Math. Phys., Comm. Partial Differential Equations, Comm. Pure Appl. Anal., Discrete Cont. Dyn. Systems, Electronic J. Differential Equations, Esaim: Control, Opt. and Calc. Var., Interfaces Free Bound., J. Comp. Phys., J. Control, Opt. Calculus of Variations, J. Convex Anal., J. Differential Equations, J. Differential Geom., J. Evolution Equations, J. Geom. Anal., J. Reine Angew. Math., Manuscripta Math., Math. Ann., Math. Meth. Appl. Sci., Meth. Appl. Anal., Pacific J. Math., Phys. A, Rendiconti Mat. Appl., Rendiconti Univ. Padova, Revista Mat. Iberoamericana, Siam J. Imaging Sci., Siam J. Math. Anal., Transactions Amer. Math. Soc.

Scientific Secretary for Ann. Sc. Norm. Super. Pisa Cl. Scienze, 1999-.

4. INSEGNAMENTO

Attività didattica avanzata: *Some aspects of motion by mean curvature I, II, III, IV*, Crete (Greece), 1998.

Geometric Evolution Problems, Minicorsi di Analisi Matematica, Padova 2003.

Anisotropic and crystalline mean curvature flow, Rome 2004.

Variational principles for geometric evolutions I, II, KTH, Stockholm (Sweden), 2007.

An introduction to mean curvature flow I, II, III, IV, University of Castilla La Mancha (Spain), 2008.

An introduction to mean curvature flow, University of Trieste (Italy), 2009.

Soluzioni deboli del flusso per curvatura media: barriere minime, SISSA (Trieste), Italy, 2009.

An introduction to mean curvature flow I, II, III, IV, Centro De Giorgi, Scuola Normale Superiore di Pisa, Pisa 2009.

An introduction to anisotropic and crystalline mean curvature flow I, II, III, IV: tutorial course, Hokkaido University, Hokkaido, Sapporo (Japan), 2010.

Mean curvature flow and singular perturbations I, II, III, in Winter School on “Geometric Evolution Equations and Related Topics”, Regensburg, October 8-10, 2012.

Corsi di dottorato: *Geometric evolutions of manifolds, motion by mean curvature*, Pisa 1998.

Partial Differential Equations, Rome 1999.

Calculus of Variation in one dimension: classical theory, Rome 2000.

Motion by mean curvature, Rome 2000.

Geometric Measure Theory, Rome 2001.

Calculus of Variations, Rome 2002.

Minimizing Movements, Rome 2003.

Una introduzione alle equazioni differenziali, INDAM, Rome 2005.

Anisotropic evolution problems, Rome 2006.

Mean curvature flow and singular perturbations, SISSA (Trieste), 2012.

Variational models depending on curvatures in image reconstruction, SISSA (Trieste), 2013.

Anisotropic and crystalline mean curvature flow, SISSA (Trieste), 2014.

The Plateau problem and related questions, SISSA (Trieste), 2015.

The Plateau problem and related questions, SISSA (Trieste), 2016.

Some results on Plateau’s type problem, SISSA (Trieste), 2017.

An Introduction to Functional Analysis, Dip. di Ingegneria dell’Informazione e Scienze Matematiche, Siena, maggio 8-12, 2017.

The Plateau problem and related questions, SISSA (Trieste), 2018.

An Introduction to Partial Differential Equations, Dip. di Ingegneria dell’Informazione e Scienze Matematiche, Siena, 2018.

Some aspects of mean curvature flow, SISSA (Trieste), 2019.

Some aspects of mean curvature flow, SISSA (Trieste), 2021.

Functional Analysis and Partial Differential Equations, ICTP Trieste, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022.

Attività didattica in Analisi Matematica, Equazioni Differenziali e Analisi Funzionale.

5. ATTIVITÀ DI SUPERVISIONE DI STUDENTI

Studenti di laurea. Masala M.: *Sulla funzione distanza al quadrato da una varietà*, (Univ. Roma Tor Vergata 2004),

Rossi R.: *A variational model for cracking in one-dimensional elasticity*, (Univ. Roma Tor Vergata 2004),

Doronzo M.: *Applications of Feynman-Kac formulas*, (Univ. Roma Tor Vergata 2005),

Palandra A.: *Probability and finance*, (Univ. Roma Tor Vergata 2006),

Biasutto S.A.: *Some economics applications of Calculus of Variations in one dimension*, (Univ. Roma Tor Vergata 2007),
 Caselli F.: *Γ -convergence and the least squares method: applications to differential equations*, (Univ. Roma Tor Vergata 2008),
 Gagliardi, D.: *Equazioni di Hamilton-Jacobi e applicazioni*, (Univ. Roma Tor Vergata 2008),
 De Angelis, F.: *Un approccio variazionale per l'evoluzione di fratture* (Univ. Roma Tor Vergata 2017).
 N. Mazur: *Sulla chiusura debole di alcuni spazi di funzionali su funzioni continue tramite delta di Dirac* (Univ. Siena 2019).

V. Galeotti: *Studio del rilassato di alcuni funzionali dipendenti dalla curvatura del bordo di sottoinsiemi del piano* (Univ. Siena 2021).

V. Lorenzini: *Equazioni ellittiche*, (Univ. Siena 2021).

R. Yammine, *Curve shortening flow*, (Univ. Siena 2022).

Studenti di laurea in collaborazione con gli INFN:

Bosco A. (2005), Senatore M. (2007), Paoli D. (2007), Gentile, S. (2008), Palandra, L. (2013), Piergentili, F. (2013), Marra, M. (2013), Capotorto, G. (2013),

ICTP Diploma students. *Nguyen Thuong Ngoc Quoc: Reaction-diffusion approximations of mean curvature flow, 2011.*

Yaptieu Djengue O.S. : On some properties of mean curvature flow with forcing and a pressure term, 2011.

Ngouanfo Fopa E.L. : Introduction to mathematical optimal control theory, 2012.

Gueye Dabakh A.A. : Some topics on ordinary differential equations in mechanics and geometry, 2012.

Khosravi M. : Minimizing movements for differential equations, 2012.

Issa Tahir Bachar: A recent variational approach to semilinear wave equations, 2012.

Batzorigh U. : Spectrum of bounded linear operators, 2013.

Ngartelbaye G. : Elliptic-type regularization for semilinear wave equations, 2013.

Ikromova D. : The Dirichlet problem for Laplace and second elliptic operators: existence, 2014.

Alsammami A. : The Alexander polynomial of a knot, 2014.

Aryam F. : Some notes on the Navier-Stokes equations, 2014.

Khachatryan M. : The Brownian motion , 2015.

Abdulrashid I. : The GN Theorem, 2015.

Yousfi N. : Some classical results in Calculus of Variations in dimension one, 2016.

Martinez Marquez R. : Some classical results on convex functions 2017.

Wahid Ullah: Some topics on C^ -algebras 2018.*

Nguyen Anh Hung: Knots and graphs, 2018.

Alain Didier Noutchequeme, Disk-type minimal surfaces: the Plateau problem and another proof of the Riemann mapping theorem, 2020.

Toshpulatov Gayrat, Some results on regularity of elliptic partial differential equations and systems, 2020.

Studenti di dottorato. *L. Mugnai: Relaxation and variational approximation of curvature-dependent functionals in two dimensions, Pisa 2003.*

G. Riey: Partition energies: approximation and first variation, Rome 2004.

M. Chermisi: Crystalline flows of planar networks and a geometric approach for systems of PDEs, Rome 2006.

C. Tornese: Convergence of discrete schemes for the Perona-Malik equation, Rome 2008.

L. Tealdi (SISSA, Trieste): The relaxed area of maps from the plane to the plane with a line discontinuity, and the role of semicartesian surface, Trieste 2015.

S. Amato (SISSA, Trieste): Some results on anisotropic mean curvature and other phase transition problems for Plateau's type problem, Trieste 2015.

S. Holmatov (SISSA, Trieste): Minimizing movements for mean curvature evolution of droplets and partitions, Trieste 2017.

A.A. Elshorbagy (SISSA, Trieste), On the relaxed area of maps from the plane to the plane taking three values, 2019.

S. Carano (SISSA, Trieste), to be defended in 2024.

6. ATTIVITÀ ORGANIZZATIVA

Progetti di ricerca:

- Coordinatore italiano del progetto bilaterale “Calculus of Variations: semicontinuity, relaxation, optimal design and approximation”, Italia-Spagna.
- Coordinatore del progetto Gnampa intitolato “Energie anisotrope, policristalline e di partizioni, e loro evoluzione secondo la massima discesa”, Roma 2003.
- Coordinatore del progetto Gnampa intitolato “Evoluzioni di interfacce e loro regolarizzazione mediante equazioni del quarto ordine”, Roma 2004.
- Coordinatore di un gruppo di ricerca (2004 - 2015) al Centro De Giorgi (Scuola Normale Superiore, Pisa) sull'argomento “Interface Evolutions”. Altri componenti: V. Caselles (Barcellona) (fino al 2013), A. Chambolle (Ecole Polytechnique, Paris), e M. Novaga (Pisa).

Conferenze e workshops:

- Organizzatore del workshop “Variational Problems with Free Interfaces”, Pisa, 1997.
- Organizzatore del workshop “Interface Evolutions and Applications”, Centro De Giorgi, Scuola Normale Superiore, Pisa, 2004.
- Organizzatore del workshop “Gradient flows of nonconvex functionals and related topics”, Centro De Giorgi, Scuola Normale Superiore, Pisa, 2005.
- Organizzatore della “Second School on Analysis and Applied Mathematics”, Univ. Roma La Sapienza, 2005.
- Organizzatore del “One day workshop on geometric evolution problems”, Centro De Giorgi, Scuola Normale Superiore, Pisa, 2005.
- Organizzatore del workshop “Recent advances on the Perona-Malik equation”, Centro De Giorgi, Scuola Normale Superiore, Pisa, 2006.
- Organizzatore del workshop “Geometric Evolutions and Applications”, Centro De Giorgi, Scuola Normale Superiore, Pisa, 2006.
- Membro del comitato organizzatore del workshop su “Nonlocal and abstract parabolic equations and their applications” Bedlewo (Poland), Banach Center, Polish Academy of Science, 2007.
- Organizzatore del workshop “Geometric Evolutions and Minimal Surfaces in Lorentzian Manifolds”, Centro De Giorgi, Scuola Normale Superiore, Pisa, 2010. 7-10 Settembre, 2010.
- Co-organizzatore della focus session “Singular Geometric Evolutions of Free Boundaries”, al Free Boundary Problem 2012 Conference, 11-15 Giugno, Chiemsee, Germania.
- Co-direttore della School on Extrinsic mean curvature flow, ICTP Trieste, 4-15 Giugno, 2018.
- Co-organizzatore del minisymposium “Nonlocal minimal surfaces and related equations” Krakow 16 Settembre, Krakow, alla DEA conference 2019, Krakow.
- Co-organizzatore del workshop “Incontri di Analisi Matematica tra Firenze, Pisa e Siena”, Firenze 17 Maggio, 2019, Pisa Novembre 2020, online 4 Giugno, 2021.
- Co-organizzatore del workshop “Free Boundary Problems and related Evolution Equations”, ESI Vienna (Austria), 21-25 Febbraio, 2022.

PUBLICATIONS OF GIOVANNI BELLETTINI

BOOKS

1. G. Bellettini: Lecture Notes on Mean Curvature flow, Barriers and Singular Perturbations, *Scuola Normale Superiore, Pisa* (Nuova Serie) 12. Pisa: Edizioni della Normale. pp. xviii-325, (2013). ISBN 978-88-7642-428-1/pbk; ISBN 978-88-7642-429-8/ebook DOI 10.1007/978-88-7642-429-8

2. G. Bellettini, V. Beorchia, M. Paolini, F. Pasquarelli: Shape Reconstruction from Apparent Contours. Theory and Algorithms, *Computational Imaging and Vision, Springer-Verlag*, pp. iii-333, 2015. ISBN 978-3-662-45190-8

ARTICLES IN SCIENTIFIC JOURNALS

- [1] G. Bellettini: An almost everywhere regularity result for minimal partitions, *Boll. Un. Mat. Ital. B (7)*, **4A** (1990), 57–63.
- [2] G. Bellettini: A numerical approach to a minimum problem with applications in image segmentations, *Ann. Univ. Ferrara XXXVI* (1990), 99–111.
- [3] G. Bellettini, M. Paolini, C. Verdi: Γ -convergence of discrete approximations to interfaces with prescribed mean curvature, *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. (9) Mat. Appl.* **1** (1990), 317–328.
- [4] G. Bellettini, M. Paolini, C. Verdi: Numerical minimization of geometrical type problems related to calculus of variations, *Calcolo* **27** (1990), 251–278.
- [5] S. Baldo, G. Bellettini: Γ -convergence and numerical analysis: an application to the minimal partitions problem, *Ricerche Mat.* **XL** (1991), 33–64.
- [6] G. Bellettini, M. Paolini, C. Verdi: Convex approximations of functionals with curvature, *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. (9) Mat. Appl.* **2** (1991), 297–306.
- [7] G. Bellettini, G. Dal Maso, M. Paolini: Semicontinuity and relaxation properties of a curvature depending functional in 2D, *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **20** (1993), 247–297.
- [8] G. Bellettini, M. Paolini: Two examples of fattening for the curvature flow with a driving force, *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. (9) Mat. Appl.* **5** (1994), 229–236.
- [9] G. Bellettini, A. Coscia: Discrete approximation of a free discontinuity problem, *Num. Funct. An. Opt* **3,4** (1994), 202–224.
- [10] G. Bellettini, M. Paolini: Convex approximations of an inhomogeneous anisotropic functional. *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. (9) Mat. Appl.*, **5** (1994), 177–188.
- [11] G. Bellettini, A. Coscia: Approximation of a functional depending on jumps and corners, *Boll. Un. Mat. Ital. (7) B*, **(7)** (1994), 151–181.
- [12] M. Amar, G. Bellettini: A notion of total variation depending on a metric with discontinuous coefficients, *Ann. Inst. H. Poincaré Anal. Non Linéaire* **11** (1994), 91–133.
- [13] G. Bellettini, M. Paolini: Variational properties of an image segmentation functional depending on contours curvature, *Adv. Math. Sci. Appl.* **5** (1995), 681–715.
- [14] G. Bellettini, M. Paolini: Some results on minimal barriers in the sense of De Giorgi applied to driven motion by mean curvature. *Rend. Acc. Naz. Sci. XL Mem. Mat.*, **XIX** (1995), 43–67.
- [15] G. Bellettini, M. Paolini: Quasi-optimal error estimates for the mean curvature flow with a forcing term, *Differential Integral Equations* **8** (1995), 735–752.
- [16] M. Amar, G. Bellettini: Approximation by Γ -convergence of a total variation with discontinuous coefficients, *Asymptotic Anal.* **10** (1995), 225–243.
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