

# Marco Artina

## Curriculum Vitae

March 2015

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## Personal Data

Name Marco  
Family name Artina  
Birthday 13<sup>th</sup> July, 1987  
Place of birth Bergamo (Italy)  
Marital status Single  
Academic titles Dipl. Math. (It: Dr.)  
Citizenship Italian

## Research

Currently working on the project: *Lagrangian methods for constrained nonconvex minimizations and applications in fracture mechanics* within the IGDK\_1754 research group.

## Education and Qualifications

### Current Position

2012- **Ph.D. student**, Department of mathematics, Applied Numerical Analysis, Technische Universität München.

### Academic Degree

02.2012 Top mark **Master degree** in Mathematics      Università degli studi di Pavia  
05.2012 Diploma in Science and Technology      IUSS, Pavia  
09.2009 Magna cum laude bachelor's degree in Mathematics      Università degli studi di Pavia

### Academic Education

2012 – PhD studies      Technische Universität München  
2009 – 2012 Master in Mathematics      Università degli studi di Pavia  
2006 – 2012 Class of Science and Technology      IUSS, Pavia  
2006 – 2009 Mathematics      Università degli studi di Pavia

### Invited Research Visit

**Institut für Mathematik und  
Wissenschaftliches Rechnen -  
Karl Franzens-Universität Graz**  
Heinrichstrae 36  
8010 Graz, Austria

– July 1 - October 10, 2014  
– December 15, 2013 - February 28, 2014

**Department Mathematik -** – July 28 - 30, 2014  
**Friedrich Alexander Universität Erlangen** – May 25 - 29, 2014  
**Nürnberg**  
 Cauerstrae 11  
 91058 Erlangen, Germany

**Department of Mathematics -** – June 13-14, 2013  
**University of Sussex**  
 Sussex House, Falmer  
 BN1 9RH Brighton, United Kingdom

**MOX - Dipartimento di Matematica -** – June 23-24, 2014;  
**Politecnico di Milano** – November 28 - December 6, 2013;  
 p.za Leonardo da Vinci 32 – February 24-27, 2013;  
 20133 Milano, Italy – January 20-27, 2013

## Individual Honors and Awards

- Selected student for the **Gene Golub SIAM Summer School** on Simulation, Optimization, and Identification in Solid Mechanics G2S3. Linz, Austria. August 4-15, 2014.
- **Student Scholarship.** IUSS Pavia 2006 – 2012.

## Publications

### Refereed research papers

1. Artina, M., M. Fornasier, and F. Solombrino (2013). Linearly constrained nonsmooth and nonconvex minimization. *SIAM Journal on Optimization* **23**(3), 1904–1937.

### Papers in conference proceedings

1. Artina, M., M. Fornasier, S. Micheletti, and S. Perotto (2015). “Anisotropic adaptive meshes for brittle fractures: parameter sensitivity”. In: *Numerical Mathematics and Advanced Applications-ENUMATH 2013*. Springer, pp.293–301.

### Submitted papers

1. Artina, M., M. Fornasier, and S. Peter (2013). Damping noise-folding and enhanced support recovery in compressed sensing. *arXiv preprint arXiv:1307.5725*.
2. Artina, M., M. Fornasier, S. Micheletti, and S. Perotto (2014). Anisotropic mesh adaptation for crack detection in brittle materials. *MOX Report*, 20–2014.
3. Artina, M., M. Fornasier, S. Micheletti, and S. Perotto (2014). The Benefits of Anisotropic Mesh Adaptation for Brittle Fractures Under Plane-Strain Conditions. *preprint*.

## Conferences and Oral Presentations

### Invited Seminars at Universities and Research Institutions

1. *Anisotropic mesh adaptation for quasistatic crack propagation in brittle materials*. MOX - Politecnico di Milano, Italy. June 23, 2014
2. *A robust and efficient anisotropic mesh adaptation strategy to numerically simulate quasi-static crack propagation in brittle materials*. Friedrich Alexander Universität Erlangen-Nürnberg, Erlangen, Germany. May 26, 2014

3. *Nonconvex and nonsmooth minimization with application in cohesive fracture model* in the seminar The MASS (Maths and Application Sussex Seminar). University of Sussex, June 13, 2013
4. *Anisotropic adaptive mesh refinement for brittle fracture model* in the seminar Applied and Computational Variational Calculus. TUM, chair M15, May 02, 2013
5. *A non-convex minimization algorithm with application in compressive sensing* in the seminar Applied and Computational Variational Calculus. TUM, chair M15, January 11, 2013
6. *A mesh refinement algorithm for quasi-static brittle fracture model* in the seminar Applied and Computational Variational Calculus. TUM, chair M15, December 14, 2012

### Invited Talks at Conferences and Workshops

7. *Anisotropic mesh adaptation for the crack path detection in quasi static brittle materials*. ECCOMAS 2014, Barcelona, Spain, July 20-25, 2014
8. *Quasi-static plane strain in brittle materials: anisotropic mesh adaptation for crack path detection*. OCIP 2014 Workshop on Numerical Methods for Optimal Control and Inverse Problems. Munich, Germany, March 3-5, 2014;
9. *Research group Project*, IGDK Summer Workshop 2013. Altaussee, Austria, September 2-6, 2013
10. *Anisotropic mesh adaptation for brittle fractures* in the minisymposium Adaptive finite elements. ENUMATH 2013, EPFL, Lausanne, Switzerland in August 26-30, 2013;
11. *Anisotropic mesh adaptation for the minimization of the Ambrosio-Tortorelli functional with application to quasi-static brittle fracture propagation*. NONUME 2013 Novel Numerical Methods. Munich, Germany, July 29-31, 2013

### Contributed Conference Presentations

12. *A robust and efficient anisotropic mesh adaptation strategy to numerically simulate quasistatic crack propagation in brittle materials*. SISSA, Trieste, Italy. March 20, 2015
13. *Anisotropic mesh adaptation for the Ambrosio-Tortorelli model: application to quasi-static crack propagation*. MAFELAP 2013, BICOM, Brunel University, Uxbridge, United Kingdom. June 11-14, 2013;

### Poster Presentations

14. *Quasistatic Evolution of Cohesive Fracture: a Numerical Approach*. Gene-Golub SIAM Summer School. Linz, Austria. August 04-16, 2014
15. *Anisotropic mesh adaptation for the Ambrosio-Tortorelli functional: application to quasi-static crack propagation*. Tetrahedron IV Workshop on grid Generation for Numerical Computation. Verbania, Italy. July 1-3, 2013

### Conference Participation

16. Intensive period on *Evolution Problems in Fracture Mechanics* at SISSA, Trieste, Italy. March 4 - April 26, 2013

## Other Activities

### Conference, Workshop, Meeting Organization

- 2014 Co-organization (with Olena Burkowska) of the *Second IGDK 1754 Student's Summer Workshop*. Malcesine, Italy. September 22-26, 2014.