

Josephin Giacomini

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PERSONAL DETAILS

Sex

Date of birth

[REDACTED]

EDUCATION

Ph.D. Student in Applied Mathematics University of Camerino 2013 - now

M.S. in Mathematics and Applications, cum laude University of Camerino October 2012

B.S. in Mathematics and Applications, cum laude University of Camerino October 2010

TEACHING

Computational Fluid Dynamics Master's Degree Lectures, University of Camerino 2014-2015

- Gathered students with different scientific backgrounds
- Introduced fundamentals of Fluid Dynamics
- Provided classical techniques to obtain numerical solutions

Mathematics Bachelor's Degree Lectures, University of Camerino 2013-2014

- Introduced mathematical formalism and basics to first-year students

RESEARCH EXPERIENCE

Doctoral researcher University of Camerino 2013 - now

- Conducted detailed studies on *analytical and numerical modelling* of the flow and the heat transfer in geothermal heat exchangers
- Developed *ad-hoc numerical simulation* tools
- Validated numerical results by a *comparison* with experimental data and analytical results

Master's Degree Thesis University of Camerino 2012

- Conducted a forefront research about the *existence of singularities* in a spherically symmetric *spacetime*
- Proposed an *analytic method* to search for naked singularities

- Created a starting point to confirm or deny the *Penrose hypothesis*

FAR Project MATREND

University of Camerino

2015-2016

- Arranged the task about the developing of a numerical model for heat exchange in geothermal probes

PUBLICATIONS

1. P. Antonini, N. Egidi, J. Giacomini, P. Maponi, "Mathematical Models for Geothermal Heat Exchangers", Conference Proceeding for MASCOT13 Section in 19th IMACS Congress. *Accepted and forthcoming.*
2. N. Egidi, J. Giacomini, P. Maponi, "Solution Strategies for Finite Elements and Finite Volumes Methods applied to Flow and Heat Transfer Problem in U-shaped Geothermal Exchangers", *AIP Conf. Proc. 1738, 480045 (2016); doi: 10.1063/1.4952281*
3. N. Egidi, J. Giacomini, P. Maponi, "A Mathematical Model for the Analysis of the Flow and Heat Transfer Problem in U-shaped Geothermal Exchangers". Submitted to Applied Mathematical Modelling. *To be accepted.*
4. N. Egidi, J. Giacomini, P. Maponi, "A Tikhonov regularisation approach to the numerical solution of pipe flows". Submitted to Computers & Fluids. *To be accepted.*

CONFERENCE PRESENTATIONS

- a. 19th **IMACS** Word Congress. Real Centro Universitario El Escorial Maria Cristina, El Escorial, Spain. August 26-30, 2013. *Speaker* in the MASCOT13 Section.
- b. **ICNAAM15** International Conference. Rodos Palace Hotel, Rhodes Island, Greece. September 23-29, 2015. *Speaker* and *chair* in General Session.

HONOURS AND AWARDS

- Doctoral Fellowship University of Camerino 2013-2016
- Accepted the Class C Project IsC23 (PEGHE) Super Computing department of CINECA September 2014-June 2015
- Academic Scholarship University of Camerino 2007-2012

EDUCATIONAL TRAVEL

University of Zagreb

Faculty of Mechanical Engineering and Naval Architecture

April-July 2015

CFD team of Prof. Hrvoje Jasak

- Learnt **OpenFOAM** software: from a beginning user to an expert user and a developer of a part of C++ code about matrix handling.

ADDITIONAL INFORMATION

Languages

Italian (mother tongue)

English (B2 – FCE certification)