Josephin Giacomini

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PERSONAL DETAILS

Sex	Female
Date of birth	19/08/1988

EDUCATION

Ph.D. in Applied Mathematics	University of Camerino	2013 - 2016
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

TEACHINGS

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

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

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

- Introduced mathematical formalism and basics to first-year students

RESEARCH EXPERIENCES

Doctoral Project   University of Camerino   2013 - 2016

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

Master's Degree Thesis   University of Camerino   2012

- Conducted an opening research about the *existence of singularities* in a spherically

symmetric *spacetime*
- Proposed an *analytical method* to search for naked singularities
- Created a starting point to confirm or deny the *Penrose hypothesis*

FAR Project MATREND   University of Camerino   2015 - now

- 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", *MASCOT13 Proceedings, IMACS Series in Computational and Applied Mathematics 19 (2016) 11-20.*

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.*

CONFERENCE PRESENTATIONS

a. **ICNAAM15** International Conference. Rodos Palace Hotel, Rhodes Island, Greece. September 23-29, 2015. *Speaker* and *chair* in General Session.

b. 19th **IMACS** Word Congress. Real Centro Universitario El Escorial Maria Cristina, El Escorial, Spain. August 26-30, 2013. *Speaker* in the MASCOT13 Section.

HONOURS AND AWARDS

▪ Fellowship	University of Camerino	August - October 2016
▪ 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 TRAVELS

University of Zagreb
Faculty of Mechanical Engineering and Naval Architecture   April - July 2015
CFD team of Prof. Hrvoje Jasak

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

- Introductory OpenFOAM course

ADDITIONAL INFORMATION

Languages

Italian (mother tongue)
English (B2 – FCE certification)

Elenco dei documenti utili ai fini della valutazione allegati alla domanda di partecipazione alla procedura selettiva per l'attribuzione di n.1 assegno di ricerca in SSD MAT/08 (candidato: Giacomini Josephin)

a) confirmation of stay at the University of Zagreb
b) certificate of attendance at 19th World Congress IMACS 2013
c) Ph.D. thesis (copia elettronica)
d) proceeding "Mathematical Models for Geothermal Heat Exchangers"
e) proceeding "Solution Strategies for Finite Elements and Finite Volumes Methods applied to Flow and Heat Transfer Problem in U-shaped Geothermal Exchangers"
f) FCE certificate