

Michela Garau

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OBJECTIVE

To work as an Atmospheric and Urban Boundary Layer engineer researcher. My knowledge in studying interactions between urban forms and atmospheric flows, could be an useful tool to urban planners. The special topic I have been studying is the influence of roof shapes on turbulence therefore on pollutant dispersion. In the future I hope to spend acquired skills, in order to mapping risk related to pollutant concentration in our cities and the possible solutions.

EDUCATION

Date	21/07/2015
Qualification	M.Sc in Environmental Engineering
Degree mark	109/110
Title of thesis	Ventilazione Nel Canyon Urbano: Influenza della Geometria degli Edifici (On the Ventilation in Urban Canyon: Influence of Buildings Shape)
Institution	University of Cagliari - Via Universita' 40, 09128 Cagliari

Date	16/07/2008
Qualification	Bachelor's Degree in Environmental Engineering
Degree mark	106/110
Title of thesis	Studio Idrogeologico della Falda Plio-Quaternaria di Barisardo (Hydrogeological Study About Plio-Quaternary Aquifer of Barisardo)
Institution	University of Cagliari - Via Universita' 40, 09128 Cagliari

EMPLOYMENT

Date	from 01/10/2015 to present
Position	PhD Student
Institution	University of Cagliari
Department	DICAAR (department of Civil-Environmental Engineering and Architecture) Hydraulic Section, via Marengo 2, 09123 Cagliari (Italy)

SKILLS

- Experience in Computational Fluid Dynamics with OpenFOAM
 - Practiced in using tools and equipment for measuring and testing
 - Good in problem solving and technical skills
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REFEREES

1st Superadvisor:

Giorgio Querzoli, PhD, M.Eng
Full Professor in Fluid Mechanics
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2nd Superadvisor:

Maria Grazia Badas, PhD, M.Eng
Researcher in Fluid Mechanics
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Member of research team:

Simone Ferrari, PhD, M.Eng
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CURRENT RESEARCH

- To investigate the influence of different roof shapes on turbulence, in order to draft useful guidelines for urban planners
- RANS and LES numerical models to performed simulations
- FTV (Feature Tracking Velocimetry) and LIV (Light Induced Visualization)
- Analysis of ventilation and mass transport, on pedestrian level and along building walls

QUALIFICATIONS

- Language qualifications: English, B2 level

POSITIONS OF RESPONSIBILITY

- Tutoring experimental and numerical analysis for Hydraulic course
- Tutoring numerical analysis with OpenFOAM for Environmental Hydraulic course
- Supporting students in an advisory role for master degrees thesis

PUBLICATIONS and PRESENTATIONS

Conference Presentations :

IDRA 2016 XXXV National Conference in Hydraulic and hydraulic structures, organized by Gii. Bologna 14-16/09/2016. Oral Presentation: Influenza della Forma del Tetto e della Posizione del Comignolo sulla Qualità dell'Aria nel Canyon Urbano.

Conference Paper :

Ferrari S, Garau M, Seoni A, Badas M Grazia, Querzoli G, (2016). The air exchange in two-dimensional urban canyons with gable roof buildings: a numerical and laboratory investigation. 17th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes 9-12 May 2016,, Budapest, Hungary.

http://www.harmo.org/conferences/Proceedings/_Budapest/publishedSections/H17-124.pdf

Ferrari S, Badas M Grazia, Garau M, Seoni A, Querzoli G, (2016). Influenza della forma del tetto e della posizione del comignolo sulla qualità dell'aria nel canyon urbano. In: Ambiente, Risorse, Energia: le sfide dell'ingegneria delle acque in un mondo che cambia. Bologna, 14-16 Settembre 2016, Bologna: DICAM Università di Bologna-ALMA MATER STUDIORUM, p. 63-66, ISBN/ISSN: 9788898010400, doi: 10.6092/unibo/amsacta/5400

Journal Articles :

Badas Maria G, Ferrari S, Garau M, Querzoli G, (2017). On the effect of gable roof on natural ventilation in two-dimensional urban canyons. Journal of Wind Engineering & Industrial Aerodynamics vol. 162; p. 24-34, ISSN: 0167-6105. <http://dx.doi.org/10.1016/j.jweia.2017.01.006>

Ferrari S, Badas Maria G, Garau M, Seoni A, Querzoli G, (under minor revision). The air quality in narrow two-dimensional urban canyons with pitched and flat roof buildings. Int. J. of Environment and Pollution.

CONFERENCES and COURSES ATTENDED

- National Conference : Water and Fluids Frontiers, organised by Gii. University of Cagliari (Italy), 11-12/06/2015
- National Conference : IDRA 2016 XXXV National Conference in Hydraulic and hydraulic structures, organized by Gii. University of Bologna (Italy) 14-16/09/2016
- Course at department level : Overview of Engineering System Modelling and Applications, University of Cagliari (Italy), short course of 20h from 15th March to 27th April 2016. Lecturer: Prof. Luca Quadrioglio
- Winter School: Advanced Seminars on Turbulence of 26h: theory and applications, University of Padua (Italy), 02 – 06/05/2016. Lecturer: Prof. Vincenzo Armenio
- International Course: VKI Lecture Series on Large Eddy Simulation, Von Karman Institute for Fluid Dynamics (Belgium), 09 – 13/05/2016. Lecturers : U.Piomelli, P.Sagaut, P.Agel, R.Verzicco, K.Squires
- International Whorkshop: EuHIT School on Turbulence, Warsaw (Poland) 04-06/07/2016. Lecturers: G.Falkovich, G.Voth, H.Jasak, M. Wilczek