

## PERSONAL INFORMATION

### Gianandrea Vittorio Messa

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Sex Male | Date of birth 06 July 1984 | Nationality Italian

## WORK EXPERIENCE

May 2013 - Present

### Post-doc Research Assistant at Politecnico di Milano

D.I.C.A. (Dipartimento di Ingegneria Civile e Ambientale)  
Politecnico di Milano  
Piazza Leonardo da Vinci, 32  
20133 Milano, Italy

Developments of models for the simulation of multiphase flows

Business or sector Academic

October 2010 - Present

### Teaching Support Assistant

D.I.C.A. (Dipartimento di Ingegneria Civile e Ambientale)  
Politecnico di Milano  
Piazza Leonardo da Vinci, 32  
20133 Milano, Italy

Teaching support activities for the courses of:  
"Applied Hydraulics", MD in Environmental Engineering  
"Fluid Labs", MD in Civil and Math Engineering  
"Advances in Hydraulics", MD in Civil Engineering  
"Applied Hydraulics", MD in Environmental Engineering  
"Hydraulics", BD in Building Engineering  
"Fluid Mechanics", BD in Energy Engineering

Business or sector Academic

October 2010 - Present

### Trainee in a CFD company

CHAM Limited  
Bakery House, 40 High Street,  
Wimbledon Village, London  
SW19 5AU

Tel: +44 20 8947 7651

Traineeship at CHAM Ltd to improve the skills in CFD programming during the PhD in the context of cooperation between CHAM and Politecnico di Milano.

- Development/implementation of models for the simulation of turbulent two-phase flows.
- Implementation of benchmark cases for the user support library.

Business or sector Computational Fluid Dynamics

## EDUCATION AND TRAINING

January 2010 – March 2013

### PhD in Environmental and Infrastructure Engineering (cum laude)

Politecnico di Milano, Milano Italy

#### PhD Thesis title

Two-fluid model for solid-liquid flows in pipeline systems

**Keywords**

- Euler-Euler models
- Turbulent flows
- Internal flows
- Two-phase Flows
- Pipe flows

March 2007 – December 2009

**Master degree in Civil Engineering (cum laude)**

Politecnico di Milano, Milano, Italy

**MD Thesis title**

Numerical investigation of the flow through orifices and perforated plates

**Keywords**

- Multi-hole orifices
- Turbulent flows
- Internal flows
- CFD

September 2003 – March 2007

**Bachelor of Science in Civil Engineering (cum laude)**

Politecnico di Milano, Milano, Italy

**MD Thesis title**

Applicazioni numeriche del modello ADEK per la propagazione di soluti nei corsi d'acqua (Numerical applications of the ADEK model for the propagation of pollutants in rivers). In Italian.

**Keywords**

- Scalar transport
- Numerical modelling
- Pollutants
- River hydraulics

September 1998 – July 2003

**High school diploma specializing in scientific subjects**

Liceo Scientifico Edoardo Amaldi, Alzano Lombardo (BG), Italy.

**PERSONAL SKILLS**

Mother tongue Italian

Other language

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	C1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

Computer skills

- CFD: PHOENICS (expert), Fluent (intermediate), OpenFoam (beginner)
- Post-Processing Packages: Paraview
- Programming languages: Matlab, C++, C, Visual Basic, FreeFem++
- Office: Word, Excel, Power Point
- Markup languages: LaTeX

Driving licence

- B

## Articles on international journals

- **Messa GV**, Malavasi S, 2015, "Improvements in the numerical prediction of fully-suspended slurry flows in horizontal pipes", *Powder Technology*, Vol. 270, pp. 358-367.
- **Messa GV**, Malavasi S, 2014, "Numerical prediction of dispersed turbulent liquid–solid flows in vertical pipes", *Journal of Hydraulic Research*, Vol. 52, No. 5, pp. 684-692.
- **Messa GV**, Malavasi S, 2014, "Numerical prediction of particle distribution of solid-liquid slurries in straight pipes and bends", *Engineering Applications of Computational Fluid Mechanics*, Vol. 8, No. 3, pp. 356-372.
- **Messa GV**, Malavasi S, 2014, "Computational investigation of liquid-solid slurry flow through an expansion in a rectangular duct", *Journal of Hydrology and Hydromechanics*, Vol. 62, No. 3, pp. 234-240.
- **Messa GV**, Malin M, Malavasi S, 2014, "Numerical prediction of fully-suspended slurry flow in horizontal pipes", *Powder Technology*, Vol. 256, pp. 61-70.
- **Messa GV**, Malavasi S, 2013, "Numerical investigation of solid-liquid slurry flow through an upward-facing step", *Journal of Hydrology and Hydromechanics*, Vol. 61, No. 2, pp. 126-133.
- Malavasi S, **Messa GV**, Fratino U, Pagano A, 2012, "On the pressure losses through perforated plates". *Flow Measurement and Instrumentation*, Vol. 28, pp. 57-66.
- **Messa GV**, Malavasi S, 2011, Discussion on: "Computational investigation of solid-liquid particle interaction in a two-phase flow around a ducted obstruction". *Journal of Hydraulic Research*, Vol. 49, No. 6, pp. 840-841.
- Malavasi S, **Messa GV**, 2011, "Dissipation and cavitation characteristics of single-hole orifices", *ASME Journal of Fluids Engineering*, Vol. 133, No. 5, 051302 (8 pages)

## Conferences

- Malavasi S, **Messa GV**, 2014, "CFD Modelling of a Choke Valve Under Critical Working Conditions", Proceedings of the ASME Pressure Vessels and Piping PVP2014 Conference, Anaheim, California, USA.
- Malavasi S, **Messa GV**, Righini A, Dalfrè Filho JG, 2013, "Desenvolvimento de um aparato experimental para o estudo de erosão causada por mistura água sólido", XX Simpósio Brasileiro de Recursos Hídricos, Bento Gonçalves, Rio Grande do Sul, Brazil.
- Malavasi S, **Messa GV**, Ferrarese G, 2013, "Solid-Liquid Flow Through a Wellhead Choke Valve", Proceedings of the ASME Pressure Vessels and Piping PVP2013 Conference, Paris, France.
- **Messa GV**, Malin M, Malavasi S, 2013, "Numerical Prediction of Pressure Gradient of Slurry Flows in Horizontal Pipes", Proceedings of the ASME Pressure Vessels and Piping PVP2013 Conference, Paris, France.
- **Messa GV**, Malavasi S, 2013, "Solid-Liquid Slurry Flow Through an Expansion in a Rectangular Duct", Proceedings of the ASME Pressure Vessels and Piping PVP2013 Conference, Paris, France.
- Malavasi S, Rossi MMA, **Messa GV**, Ferrarese G, 2013, "Numerical Method to Provide Cavitation Index for Control Valves", Proceedings of the ASME Pressure Vessels and Piping PVP2013 Conference, Paris, France.
- Pagano A, **Messa GV**, Malavasi S, Fratino U, 2012, "Definizione sperimentale dell'efficienza dissipativa di diaframmi a foro multiplo con geometria variabile"(Experimental characterization of energy dissipations through multi-hole orifices with differen geometry, in Italian) *Atti del XXXIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Università degli Studi di Brescia, Brescia, Italy.
- **Messa GV**, Malavasi S, 2012, "Solid-liquid slurry flow through an upward-facing step" *Atti del XXXIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, Università degli Studi di Brescia, Brescia, Italy.
- Fratino U, Pagano A, Malavasi S and **Messa GV**, 2012, "Pressure Drop and Recovery Across Sharp-Edged Multi-Hole Orifices", 2<sup>nd</sup> IAHR Conference, 27-29 June 2012, Technische Universität München, Munich, Germany.
- Malavasi S, **Messa GV** and Macchi, S., 2010, "The pressure drop coefficient through sharp-edged perforated plates", *Atti del XXXII Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, W. Farina eds., Dipt. of IIAA University of Palermo, Palermo, Italy, p. 193.

#### Oral/poster presentations

- Mastronardi MV, **Messa GV**, Pagano A, Malavasi S, Fratino U, 2014, "Modellazione fluidodinamica del comportamento dissipativo di piatti forati con orifici a sagomatura variabile", *XXXIV Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, 8-10 Settembre 2014, Bari, Italia (Poster)
- **Messa GV**, Malavasi S, 2014, "Simulation of fully-suspended solid-liquid slurry flows in horizontal pipes in parabolic mode", *2<sup>nd</sup> International Conference of Numerical Methods in Multiphase Flows*, 30 Giugno – 2 Luglio 2014, Darmstadt, Germany (Oral presentation)
- **Messa GV**, Malavasi S, Malin M, 2012, "Flow of sand-water mixtures in horizontal pipes", *European Post-Graduate Fluid Dynamics Conference*, 10-12 Luglio 2012, Imperial College, London UK (Poster)

#### Honours and awards

- 2013 Gii Award for Doctoral Thesis in Water Engineering