

Giulia Valerio



Italian, 27/03/1982

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Education

Ph.D. in Hydraulic Engineering cum laude - *Politecnico of Milan* ([link](#)) 01/01/2008 - 22/2/2011

Thesis in the field of physical limnology: "Measurement, analysis and modeling of internal waves propagation in Iseo Lake". Supervisor: Prof. Marco Pilotti. [Link to the thesis' description](#)

Visiting student at the Centre for Water Resources (CWR) - *University of Western Australia* ([link](#)) 20/02/2010 – 20/05/2010

Visiting student taking part to a joint research project on the hydrodynamics of Lake Iseo.

M.S. Environmental Engineering cum laude - *University of Brescia* ([link](#)) 2004– 2007

Curriculum "Prevention and mitigation of hydro-geological risk". Thesis in field of computational fluid dynamics: "Evaluation of the consequences of the hydroelectrical exploitation on the internal circulation of a small alpine lake", developed by using the CFD software FLUENT.

B.S. Environmental Engineering cum laude - *University of Brescia* ([link](#)) 2001 – 2004

Thesis in hydraulic engineering: "Simplified models for the propagation of long waves in prismatic channels", focused on the development of simplified numerical algorithms for the numerical simulation of unsteady flows.

High school diploma - *Liceo scientifico "A. CALINI" – Brescia* ([link](#)) 1996 – 2001

Scientific education with two language teaching (German and English), mark: 100/100.

Research and Teaching Experience

University of Brescia – DICATAM Department ([link](#))

Researcher (RTD-B)

01/11/2018 – present

Postdoctoral researcher

01/01/2011 – 31/10/2018

Physical limnology as leading areas of research. Main research interest in combining field and numerical modelling techniques to describe the physical processes occurring in lakes and studying their impacts on water quality. Direct responsibilities in maintaining the monitoring stations network in Lake Iseo, in managing and analysing the measured data, and in modelling lakes physics. Reviewer of the ISI Journals "Limnology and Oceanography" and "Journal of Limnology". 2011 - present

- Responsible for the physical and chemical modeling of Lake Iseo for the EU project SILMAS (Sustainable Instruments for Lakes Management in the Alpine Space) ([link](#)) 2011 - 2012
- Responsible for the dissemination activity of the research project ISEO funded by Fondazione Cariplo ([link](#)) 2016 -2019

Teaching assistant

- Teaching assistant in the Hydraulic class (B.S. Environmental and Civil Engineering) 2007 - present
- Assistant supervisor of 6 M.S. and 4 B.S. thesis. 2011 - present
- Responsible for 60 hours teaching in the Environmental Hydraulics class (International M.S. Civil and Environmental Engineering), with an average evaluation by the students of 8.6. Mar-June 2017
- Responsible for 30 hours teaching in the Environmental Hydraulics class (International M.S. Civil and Environmental Engineering) Mar-Apr 2018

Professional Experience

- assoRinnovabili - Association of Producers of Energy from Renewable** ([link](#)) 2006 – 2007
- Project consultant (6 months) for the European project SHERPA (Small Hydro Energy Efficient Promotion Campaign Action). [Link to the project's website](#)
- Studio Frosio – Engineering Office** ([link](#)) 2007
- Intern (3 months) working at the design of the water intakes of a thermal power plant.

Memberships

- Member, Society of Professional Engineers of Brescia since 2007
- Member, European Geophysical Union (EGU) 2009
- Member, Hydro-Environment Engineering and Research IAHR Student Chapter 4-Italy since 2010
- Member, Gleon (Global Lake Ecological Observatory Network) since 2011
- Member, the American Society of Limnology and Oceanography (ASLO) 2012

Languages

- Italian: native speaker
- English: fluent speaking, writing and reading (PET test B1 level, Dec02; TOEFL test: 96/120, May09)
- German: good writing and reading, fair speaking

Computer skills

- Proficient in the use of the instruments of Microsoft Office;
- High-level programming capabilities with the coding *Matlab* and *Delphi* (Pascal)
- Proficient in the use of GIS *MapInfo* and *ArcGis*
- Proficient in the use of the software *Fluent*, *Elcom*, *Dyresm*, *Delft3D*, *Caedym* for hydrodynamics and ecological simulations .

Interests

Travelling, skiing, bicycle riding.

Publications with peer review process

Citation metrix (From Scopus, July. 2018): H index = 6; Nr. publications = 16; Nr. Citations = 121.

1. Pilotti M., Tomirotti M., **Valerio G.**, and Bacchi B. (2010). Simplified Method for the Characterization of the Hydrograph following a Sudden Partial Dam Break, *Journal of Hydraulic Engineering*, 136(10): 693-704.
2. Pilotti M., Maranzoni, A., Tomirotti M., **Valerio G.** (2011). 1923 Gleno Dam Break: Case Study and Numerical Modeling. *Journal of Hydraulic Engineering*, 137(4): 480-492.
3. **Valerio G.**, Pilotti M., Marti C.L., and Imberger J. (2012). The structure of basin scale internal waves in a stratified lake in response to lake bathymetry and wind spatial and temporal distribution: Lake Iseo, Italy. *Limnology and Oceanography*, 57(3): 772-786.
4. Pilotti, M., Tomirotti M., **Valerio G.** and Milanese L. (2013). Discussion on Experimental investigation of reservoir geometry effect on dam-break flow by A. Feizi Khankandi, A. Tahershamsi And S. Soares-Frazão, J. Hydraulic Res. 50(4), 2012, 376–387, *Journal of Hydraulic Research*, 51(2): 220-222.
5. Pilotti, M., **Valerio G.** and Leoni B. (2013), Data Set For Hydrodynamic Lake Model Calibration: A Deep Pre-Alpine Case, *Water Resources Research*, 49: 1–5, doi:10.1002/wrcr.20506.
6. Pilotti, M., **Valerio G.**, Gregorini L., Milanese L., and Hogg C. A. R. (2014) Study of tributary inflows in Lake Iseo with a rotating physical model, *Journal of Limnology*, 73(1), doi: 10.4081/jlimnol.2014.772.
7. Pilotti, M., Simoncelli, S., **Valerio, G.** (2014), A simple approach to the evaluation of the actual water renewal time of natural stratified lakes, *Water Resources Research*, 50, 2830–2849, doi:10.1002/2013WR014471.
8. Pilotti, M., Simoncelli, S., **Valerio, G.** (2014). Computing the transport time scales of a stratified lake on the basis of Tonolli's model, J. Limnol., published online, doi:10.4081/jlimnol.2014.897.
9. Pilotti, M., Maranzoni, A., Milanese L., Tomirotti M., **Valerio G.** (2014). Dam-break modeling in alpine valleys. *Journal of Mountain Science*, 11(5). DOI: 10.1007/s11629-014-3042-0
10. Guyennon N., **Valerio, G.**, Salerno, F., Pilotti, M., Tartari, G., Copetti, D. (2014). Internal wave weather heterogeneity in a deep multi-basin subalpine lake resulting from wavelet transform and numerical analysis, *Advances in Water Resources*, 71, 149–161, doi:10.1016/j.advwatres.2014.06.013.
11. Milanese L., Pilotti M., Ranzi R., **Valerio G.** (2014). Methodologies for hydraulic hazard mapping in alluvial fan areas, in: *Evolving Water Resources Systems: Understanding, Predicting and Managing Water–Society Interactions*, Proceedings of ICWRS2014, Bologna, Italy, 4-6 June 2014, IAHS Publication n.364, Wallingford (UK), ISBN: 978-1-907161-42-1, 267-272.
12. **Valerio, G.**, Pilotti, M., Barontini, S., Leoni, B. (2015), Sensitivity of the multiannual thermal dynamics of a deep pre-alpine lake to climatic change, *Hydrological Processes*, Accepted for Publication, DOI: 10.1002/hyp.10183.
13. Cantelli A., Monti, P., Leuzzi, G., **Valerio G.** and Pilotti, M. (2016), Numerical simulations of mountain winds in an alpine valley. *Wind and Structures*, Vol. 24, No. 6 (2017) 565-578. DOI: <https://doi.org/10.12989/was.2017.24.6.565>

14. **Valerio, G.**, Cantelli, A., Monti, P., and Leuzzi, G. (2017). A modeling approach to identify the effective forcing exerted by wind on a pre-alpine lake surrounded by a complex topography. *Water Resources Research*, 53(5), 4036–4052, DOI: 10.1002/2016WR020335
15. Pilotti, M., **Valerio, G.**, Giardino, C., Bresciani, M., Chapra, S. (2018). Evidence from field measurements and satellite imaging of impact of Earth rotation on Lake Iseo chemistry, *Journal of Great Lakes Research*, 44, 14–25. DOI: <https://doi.org/10.1016/j.jglr.2017.10.005>
16. Louise C. Bruce, Marieke A. Frassl, George B. Arhonditsis, Gideon Gal, David P. Hamilton, Paul C. Hanson, Amy L. Hetherington, John M. Melack, Jordan S. Read, Karsten Rinke, Anna Rigosi, Dennis Trolle, Luke Winslow, Rita Adrian, Ana I. Ayala, Serghei A. Bocaniov, Bertram Boehrer, Casper Boon, Justin D. Brookes, Thomas Bueche, Brendan D. Busch, Diego Copetti, Alicia Cortes, Elvira de Eyto, J. Alex Elliott, Nicole Gallina, Yael Gilboa, Nicolas Guyennon, Lei Huang, Onur Kerimoglu, John D. Lenters, Sally MacIntyre, Vardit Makler-Picka, Chris G. McBride, Santiago Moreira, Deniz Ozkundakci, Marco Pilotti, Francisco J. Rueda, James A. Rusaka, Nihar R. Samala, Martin Schmida, Tom Shatwella, Craig Snorthheim, Frederic Soulignac, **Giulia Valerio**, Leon van der Linden, Mark Vetter, Brigitte Vinçon-Leite, Junbo Wang, Michael Weber, Chaturangi Wickramaratne, R. Iestyn Woolway, Huaxia Yao, Matthew R. Hipsey, A multi-lake comparative analysis of the General Lake Model (GLM): Stress-testing across a global observatory network, April 2018, *Environmental Modelling and Software* 102:274-291, DOI: 10.1016/j.envsoft.2017.11.016.
17. Pilotti, M. Chapra S. C. and **Valerio, G.** (2019). Steady-State Distributed Modeling of Dissolved Oxygen in Data-Poor, Sewage Dominated River Systems Using Drainage Networks, *Environmental Modeling and Software*, 111, 153-169, <https://doi.org/10.1016/j.envsoft.2018.08.027>.
18. Barone, L., Pilotti, M., **Valerio, G.**, Balistrocchi, M., Milanese, L., Chapra, S. and Nizzoli, D. (2019) Analysis of the residual nutrient load from a combined sewer system in a watershed of a deep Italian lake. Accepted for publication in *Journal of Hydrology*.
19. **Valerio, G.**, Pilotti, M., Lau, M.P. and Hupfer, M., (2019). Oxycline oscillations induced by internal waves in deep Lake Iseo, Accepted for publication in *Hydrology and Earth System Sciences (HESS)*.

Conference Proceedings

1. Maranzoni A., Pilotti M., Tomirotti M., **Valerio G.** (2007). Modellazione numerica e sperimentale dei primi istanti di moto conseguenti alla rapida rimozione di uno sbarramento, *Atti del XVIII Congresso dell'Associazione Italiana di Meccanica Teorica e Applicata*, Brescia, 11-14/09/2007.
2. Gollessi S., **Valerio G.** (2007). Implementation of WFD in Italy and experimental studies on reserved flow, *Proc. Hydro 2007: New Approaches for a New Era*, Granada, 15-17/10/2007.
3. Maranzoni A., Pilotti M., Tomirotti M., **Valerio G.** (2008). Modellazione numerica dell'onda conseguente all'ipotetico crollo della prima diga di Cancano, *Atti del XXXI Convegno di Idraulica e Costruzioni Idrauliche*, Perugia, 09-12/09/2008.
4. Pilotti, M., Tomirotti, M., **Valerio G.** e Bacchi, B. (2010). A simplified prediction model for the outflow hydrograph due to partial dam break, *Proc. First European IAHR Congress*, Edinburgh, 4-6/5/2010.

5. Pilotti M. e **Valerio**, G. (2010). Preliminary evaluations of the impact of a pumped storage plant on the hypolimnetic circulation of a deep subalpine Italian lake, *Proc. First European IAHR Congress*, Edinburgh, 4-6/5/2010.
6. **Valerio**, G., Pilotti, M. (2012) Le onde interne del lago d'iseo: osservazione sperimentale e modellazione numerica, *Atti del XXXI Convegno di Idraulica e Costruzioni Idrauliche*, Brescia (Italy), 10-14/9/2012.
7. Milanese, L., Pilotti, M., **Valerio**, G. (2013). The application of environmental flow regulations to small hydropower plants in alpine areas. *Proc. International Workshop on Hydraulic Design of Low-head Structures*, Aachen (Germany), 20-22/2/2013.
8. Pilotti, M., Maranzoni, A., Milanese, L., Tomirotti, M., **Valerio**, G. (2013). Hydraulic hazard mapping in alpine dam break prone areas: the Cancano dam case study, *Proc. XXXV IAHR Congress*, Chengdu, China, 7 pp., 8
9. Pilotti, M., Simoncelli, S., **Valerio** G., (2014). A simple way to compute the distribution of the age of water within thermally stratified natural lakes. Proceedings of *XXVII PPNW*, Trento, Italy, 1-4 July 2014.
10. **Valerio** G., Pilotti, M. (2014). The role of winter climate on the deep temperature evolution of a deep Italian lake. Proceedings of *XXVII PPNW*, Trento, Italy, 1-4 July 2014.
11. **Valerio**, G., Pilotti, Cantelli A., Monti, P., Leuzzi, G.. (2016). A coupled atmospheric-lake model to simulate the internal waves structure in a deep, stratified lake. Proceedings of *XIX PPNW*, Bath, UK, 12-15 July, 2016
12. Pilotti, G. M., **Valerio**, G., Gregorini L. and Simoncelli S. (2016). Reconstruction of the 3D distribution of physical parameters in the northern part of Lake Iseo. Proceedings of *XIX PPNW*, Bath, UK, 12-15 July, 2016
13. **Valerio** G., Pilotti, M., Chapra, S., Caramatti, I. (2016). Ecological model of the effects of an exceptional deep circulation in a pre-alpine lake. Proceedings of *XXXIII SIL Congress*, Torino, 31 July – 5 August 2016.
14. Pilotti, M., Chapra, S., **Valerio** G., Barone L., Balistrocchi M. (2016). Modeling nutrients residual load from the combined sewer serving the eastern shore of Lake Iseo. Proceedings of *XXXIII SIL Congress*, Torino, 31 July - 5 August 2016.
15. **Valerio**, G., Pilotti, Cantelli A., Monti, P., Leuzzi, G.. (2016). Sensitivity of the basin-scale internal wave structure in a prealpine lake to wind distribution. Proceedings of *XXV IDRA2016 Congress*, Bologna, 14-16 September 2016.
16. Pilotti, M., **Valerio**, G., Simoncelli, S. (2016). Computing the actual water renewal time of natural stratified lake. Proceedings of *XXV IDRA2016 Congress*, Bologna, 14-16 September 2016.
17. **Valerio**, G., Pilotti, M., Hupfer, M., Lau, M. (2017). Oxycline oscillations induced by internal waves in deep Lake Iseo. *5th Workshop on "Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling"* (LAKE 2017), Berlin, Germany, 16-19 October 2017.

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