

Curriculum vitae

PERSONAL INFORMATION

Family name: Marzadri

First name: Alessandra

• EDUCATION

2009 PhD Doctoral Degree in Environmental Engineering,
University of Trento, Dept. of Civil, Environmental and Mechanical Engineering (DICAM),
Trento, Italy.

2004 Combined Bachelors and Masters degrees in Environmental Engineering
University of Trento, DICAM, Trento, Italy.

• CURRENT POSITION

2021 –present Associate Professor
Department of Civil, Environmental and Mechanical Engineering, University of Trento
(Trento, Italy)

• PREVIOUS POSITIONS (last five years)

2018 – 2021 Assistant Professor
Department of Civil, Environmental and Mechanical Engineering (DICAM), University of
Trento (Trento, Italy)

2014 – 2018 Post-doctoral researcher
University of Idaho, Center for Ecohydraulics Research, Boise (Idaho, USA)

• FELLOWSHIPS AND AWARDS

2017 – 2018 Participation as post doctoral research fellow at the NSF EPSCoR program (award number
IIA-1301792). University of Idaho, Center for Ecohydraulics Research, Boise, Idaho, United
States;

2014 – 2017 co-PI (participation as post doctoral research fellow) of the NSF project (grant EAR
1344602). University of Idaho, Center for Ecohydraulics Research, Boise, Idaho, United
States.

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2012 – present Supervisor of 3 MSc Thesis, course of Environmental Engineering, University of Trento;
Supervisor of 3 MSc Thesis, course of Architecture and Building Engineering, University of
Trento (3 ongoing); Co-supervisor of 1 Ph.D Thesis, course of Environmental Engineering,
University of Idaho, USA (1 ongoing within the Doctoral School of Civil, Environmental and
Mechanical Engineering of the University of Trento)

• TEACHING ACTIVITIES

2018 – present Main Teacher – Course: Costruzioni Idrauliche con Nozioni di Idraulica, Master Degree in
Architecture and Building Engineering, University of Trento, Italy;

2018 – present Main Teacher – Course: Elementi di Idraulica e Costruzioni Idrauliche, Bachelor Degree
(LT) in Civil Engineering, University of Trento, Italy;

2018 – 2019 Teaching assistant for the Ph.D course of Geostatistics, Doctoral School in Civil and
Environmental Engineering Sciences, University of Trento, Italy

Invited Lectures/Speeches:

November 2015: “Revealing the role of stream morphology of nitrous oxide emissions” Brown-Bag Lunch
Seminars, University of Notre Dame, Environmental Change Initiative, Notre Dame, Indiana, United States.

July 2014: “Modeling biogeochemical and hydrodynamic processes within the hyporheic zone”, IAHR
Seminars, University of Idaho, Center for Ecohydraulics Research, Boise, Idaho, United States.

• ORGANISATION OF SCIENTIFIC MEETINGS

Co-Convener for national and international workshops, conferences and meetings.

- 2021 Co-convener for the session “*Processi di trasporto negli ecosistemi fluviali*” at XXXVII Convegno Nazionale di Idraulica e Costruzioni Idrauliche IDRA 2020, Reggio Calabria (rescheduled to June 2021 for Covid-19 pandemic).
- 2018 Co-convener for the session “*Ecohydraulics*” (G.3) at 5th IAHR Europe Congress, 12-14 June Trento, Italy.

• **INSTITUTIONAL RESPONSIBILITIES**

- 2018 – present Member of the scientific board of the Doctoral Program of Civil, Environmental and Mechanical Engineering, University of Trento (Italy);
- 2018 – present Member (on occasional basis) of several Commissions for the final release of the Bachelor and Master degrees in Environmental Engineering and Architecture and Building Engineering, University of Trento (Italy);
- 2018 – present Graduate Student Advisor, DICAM, University of Trento (Italy);
- 2012 – 2015 Graduate Student Advisor, University of Idaho, Boise (ID, USA);
- 2012 – 2015 Member of the graduate committee University of Idaho, Doctorate School in Civil Engineering, Boise (ID, USA).

• **REVIEWER (2012-present)**

Science of the Total Environment (IF. 6.551), Global Change Biology (IF. 8.555), Advances in Water Resources (IF. 4.016), Environmental Science and Technology (IF. 7.864) Water Research (IF. 9.130), Hydrological Sciences Journal (IF. 2.230), Geophysical Research Letters (IF. 4.580), Journal of Hydrology (IF. 4.5), Journal of Geophysical Research-Bioscience (IF. 3.406), Water Resources Research (IF. 4.36), Hydrological Processes (IF. 3.256), Hydrology and Earth System Science (IF. 4.256)

• **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

- 2013 – present Member of Gruppo Italiano di Idraulica (GII)
- 2008 – 2018 Member of American Geophysical Union (AGU)
- 2008 – 2009 Member of Aquaterra EU project

BIBLIOMETRIC RECORD

Co-author of 19 papers in ISI journals

Co-author of 2 book chapters

Co-author of 7 papers in proceedings of International conferences and workshops

Number of citations: 556 citations (Scopus)

H-index (Scopus):12 (excluding self citation h-index: 11)

Total Impact Factor of publications: 77

Average Impact Factor of publications: 4.28

17 scientific communications to national and international conferences

2 invited talks to international conferences

2 seminar to international institutions

PUBLICATIONS

Marzadri, A., G. Amatulli, D. Tonina, A. Bellin, L.Q. Shen, G.H. Allen and P.A. Raymond. 2021, Global riverine nitrous oxide emissions: the role of small streams and large rivers. *Science of the Total Environment*, vol. 776, ISSN: 0048-9697, doi: 10.1016/j.scitotenv.2021.145148. (0 citations)

Marzadri, A., D. Tonina and A. Bellin. 2020, Power law scaling model predicts N2O emissions along the Upper Mississippi River basin. *Science of the Total Environment*, vol. 732, ISSN: 0048-9697, doi: 10.1016/j.scitotenv.2020.138390. (2 citations)

Reeder, W. J., A.M. Quick, T. B. Farrell, S.G. Benner, K.B. Feris, W.J.R. Basham, **A. Marzadri**, D. Tonina and C. Huber. 2019, A novel fiber optic system to map dissolved oxygen concentrations continuously within submerged sediments. *Journal of Applied Water Engineering and Research*, vol. 2019, p. 216-227, ISSN: 2324-9676, doi: 10.1080/23249676.2019.1611495. (0 citations)

Boso F., **A. Marzadri**, and D.M Tartakovsky. 2018, Probabilistic forecasting of nitrogen dynamics in hyporheic zone, *Water Resources Research*, vol. 2018/54, p. 4417-4431, ISSN: 1944-7973, doi: 10.1029/2018WR022525. (3 citations)

- Reeder W. J., A.M. Quick, T.B. Farrell, S.G. Benner, K.P. Feris, **A. Marzadri** and D. Tonina. 2018, Hyporheic source and sink of nitrous oxide. *Water Resources Research*, vol. 2018/54, ISSN: 1944-7973, doi: 10.1029/2018WR022564. (6 citations)
- Wollheim W.M., S. Bernal, D. Burns, J.A. Czuba, C.T. Driscoll, A.T. Hansen, R.T. Hensley, J.D. Hosen, S.S. Kaushal, L. Koenig, Y. Lu, **A. Marzadri**, P. A. Raymond, D. Scott, R.J. Stewart, P.G. Vidon, and E. Wohl. 2018, River network saturation hypothesis: factors influencing biogeochemical demand of entire river networks relative to supply. *Biogeochemistry*, vol. 141, p. 503-521, ISSN: 0168-2563, doi: 10.1007/s10533-018-0488-0. (46 citations)
- Marzadri A.**, M. M. Dee, D. Tonina, A. Bellin and J. L. Tank. 2017, Role of surface and subsurface processes in scaling N₂O emissions along riverine networks, *Proceedings of the National Academy of Science (PNAS)*, 114(17): 4330-4335, doi: 10.1073/pnas.1617454114. (61 citations)
- Benjankar R. M., D. Tonina, **A. Marzadri**, J. A. McKean and D. J. Isaak. 2016, Effects of habitat quality and ambient hyporheic flows on salmon spawning site selection, *Journal of Geophysical Research Biogeosciences*, 121, doi:10.1002/2015JG003079. (11 citations)
- Tonina D., F.P.J. de Barros, **A. Marzadri** and A. Bellin. 2016. Does streambed heterogeneity matter for hyporheic residence time distribution in sand-bedded streams? *Advances in Water Resources*, 96: 120-126, doi:10.1016/j.advwatres.2016.07.009. (32 citations)
- Marzadri A.**, D. Tonina, A. Bellin and A. Valli. 2016, Mixing interfaces, fluxes, residence times and redox conditions of the hyporheic zones induced by dune-like bedforms and ambient groundwater flow. *Advances in Water Resources*, 88: 139-151, doi:10.1016/i.advwaters.2015.12.014. (30 citations)
- Bellin A., D. Tonina, and **A. Marzadri**. 2015, Breakthrough curve moments scaling in hyporheic exchange, *Water Resources Research*, 51, doi:10.1002/2014WR016559. (6 citations)
- Tonina D., **A. Marzadri**, and A. Bellin. 2015, Benthic Uptake Rate due to hyporheic exchange: the effects of streambed morphology for constant and sinusoidally varying nutrient loads, *Water*, 7, p. 398-419, doi:10.3390/w7020398. (13 citations)
- Marzadri A.**, D. Tonina, A. Bellin, and J. L. Tank. 2014, Greenhouse gas emissions from river networks depend on stream morphology. *Geophysical Research Letters*. 41: 5484-5491, doi: 10.1002/2014GL060732. (46 citations)
- Marzadri A.**, D. Tonina, J. A. McKean, M. G. Tiedemann, and R. M. Benjankar. 2014, Multi-scale streambed topographic and discharge effects on hyporheic exchange at the stream network scale in confined streams. *Journal of Hydrology*, 519: 1997-2011, doi:10.1016/j.jhydrol.2014.09.076. (18 citations)
- Marzadri A.**, D. Tonina, and A. Bellin. 2013, Effects of stream morphodynamics on hyporheic zone thermal regime, *Water Resources Research*, 49, doi:10.1002/wrcr.20199. (33 citations)
- Marzadri A.**, D. Tonina, and A. Bellin. 2013, Quantifying the importance of daily stream water temperature fluctuations on the hyporheic thermal regime: Implication for dissolved oxygen dynamics. *Journal of Hydrology*, 507: 241-248, doi:10.1016/j.jhydrol.2013.10.030. (32 citations)
- Marzadri A.**, D. Tonina, and A. Bellin. 2012, Morphodynamic controls on redox conditions and on nitrogen dynamics within the hyporheic zone: Application to gravel bed rivers with alternate-bar morphology. *Journal of Geophysical Research*, 117: G00N10, doi:10.1029/2012JG001966. (85 citations)
- Marzadri A.**, D. Tonina, and A. Bellin. 2011, A semianalytical three-dimensional process-based model for hyporheic nitrogen dynamics in gravel bed rivers, *Water Resources Research*, 46, W11518, doi:10.1029/2011WR010583. (71 citations)
- Marzadri A.**, D. Tonina, A. Bellin, G. Vignoli, and M. Tubino. 2010, Semianalytical analysis of hyporheic flow induced by alternate bars, *Water Resources Research*, 46, W07531, doi:10.1029/2009WR008285. (56 citations)

BOOKS AND CHAPTERS

- Tonina, D., **A. Marzadri** and A. Bellin. 2017, Modeling Surface–Subsurface Exchange of Heat and Nutrients, In: *Gravel-Bed Rivers: Processes and Disasters* (eds D. Tsutsumi and J. B. Laronne), John Wiley & Sons, Ltd, Chichester, UK. doi: 10.1002/9781118971437.ch9. (0 citations)
- Marzadri A.** and A. Bellin 2013, Nitrogen cycle in gravel bed rivers: The effect of the hyporheic zone. In: *Groundwater and Ecosystems*. Editors: Luis Ribeiro, Tibor Y. Stigter, Antonio Chambel, M. Teresa Condesso de Melo, Jose Paulo Monteiro, Albino Medeiros. New York: CRC Press, Taylor & Francis Group, ISBN: 9781138000339. (0 citations)