


**Coordinatore GEV-08b**

**Aronne Armanini**



<b>Aronne Armanini</b>		
<b>date of birth</b>	<b>July 8, 1948</b>	
<b>place of birth</b>	<b>Padua, Italy</b>	
<b>position</b>	<b>Professor of Hydraulics University of Trento, Italy</b>	

### **Employment Record:**

- Professor of Hydraulics, Faculty of Engineering, University of Trento, Italy, 1986-present;
- Member of the Academic Senate, University of Trento, 2013-present;
- Vice rector with responsibility for evaluation processes, 2013-2015;
- Head of Department of Civil and Environmental Engineering, University of Trento, 2007-2012;
- Dean of the Faculty of Engineering, University of Trento 1996-2002;
- Member of Board of Governors of University of Trento, 2004-2007.
- Member of the panel 08 (GEV 08) of ANVUR (National Agency for the Evaluation of the University and Research Systems, 2012;
- First Proposer and head of CUDAM of the University of Trento – University Centre on Hydrogeological Risks in Mountain Areas; Ministry of University and Research, 2001-2007.
- Chairman of the Italian Group of Hydraulics, 2004-2008;
- Member of the Evaluation Panel of the PRIN Projects of the MIUR (Ministry of University and Scientific Research) for Civil Engineering Area and Architecture in 2006;
- Member of Board of National institute for Scientific Research on the Mountains of MIUR, 2000-2004
- National Coordinator of the national project on Fluvial Hydraulics of the MIUR, 1986-1995;
- Director of the Short Course “Small Rivers and Torrents Regulation” of the European School of Hydraulics of IAHR, 1997 and 1998;
- Head of the Laboratory of Hydraulics, University of Trento, since 1986;
- National Coordinator of the project Debris Flows; ARA-COD National Group on Protection against Hydrogeological Disasters of the National Research Council;
- Member of the Technical Committee of the Adige River Authority, since 1990 ;
- Member of the Technical Committee of the Isonzo Tagliamento, Piave and Livenza Rivers Authority, since 2009;
- Member of the Scientific Department of the National Technical Services of the Presidency of the Council of Ministers; 1997.

### **International awards:**

- M.S. Yalin IAHR Award, July 2015;
- Member of Istituto Veneto di Scienze Lettere ed Arti, Venice, since 2009;
- Chairman of European Division of International Association of Hydraulic Research, 2007-2014;
- Member of the Council of the IAHR, 1997-2001 and 2007-2013;
- Member of the Evaluation Panel of Civil and Mine Engineering for FCT – Science and Technology Foundation of Portugal (Fundação para a Ciência e a Tecnologia), 2004, 2007 and 2010;
- Chairman of Continuing Education and Training Section of IAHR (International Association of Hydraulic Engineering and Research), 2001-2007;
- Member of the Subcommittee on "Non-Newtonian Fluids Applied to Debris Flow and Mudflow" of the American Society of Civil Engineering;
- Member of the Steering Committee of the European School of Hydraulics - I.A.H.R.

### **Invited lecture and keynotes:**

- Accademia Nazionale dei Lincei, Convegno “Cosa non funziona nella difesa dal rischio idrogeologico nel nostro Paese? Analisi e Rimedi”. Roma 23 marzo 2012. Invited keynote;
- 5th International Conference on Debris-Flow Hazards Mitigation: Mechanics, Prediction and Assessment June 14-17, 2011 University of Padua. General lecture;

- XXXII Convegno Nazionale di Idraulica e Costruzioni Idrauliche, Palermo, 14-17 settembre 2010. Invited keynote lecture;
- Accademia Nazionale dei Lincei, X Giornata mondiale dell'acqua. Convegno sul tema: "Frane e dissesto idrogeologico: consuntivo". Roma 17 marzo 2010. Invited keynote;
- International Workshop European Big Waterways for Sustainable Growth of Regional and Local Systems. The Po River, Parma, October 29th-30th 2009. Invited lecture;
- École Polytechnique, Paris. Développement Durable: l'exemple franco-italien. Paris 2 octobre 2008. Invited lecture;
- Autorità di Bacino dell'Adige Workshop: Difesa Idrogeologica nel Bacino Del Fiume Adige: Morfologia del Fiume Adige. Verona, 18 marzo 2008, Invited lecture;
- Seconda Università degli Studi Di Napoli- Ciriam. Giornata di studio su: Le miscele acqua-terreno: alluvioni, flussi iperconcentrati e colate di fango. Fenomeni alluvionali e colate di detrito – mitigazione del rischio. Napoli Aversa 15 febbraio 2008. Invited lecture;
- Mosaico Scienze 2008. IX Edizione. Le sfide del terzo millennio: Acqua, aria, terra, energia e sviluppo sostenibile. Acqua fonte di vita. Ponti sul Mincio 22 Maggio 2008. Invited lecture;
- Magistrato alle Acque di Venezia. Giornata Nazionale su: La validità dei modelli fisici nell'idraulica moderna. Padova Voltabarozzo, 12 ottobre 2007. Invited lecture;
- Giornata in memoria di Vittorio Biggiero e di Carlo e Michele Viparelli, Università degli Studi Di Napoli Federico II, Dipartimento Di Ingegneria Idraulica ed Ambientale 'Girolamo Ippolito', Novembre 2004. Invited keynote;
- Workshop on Wet Granular Material in Movement, Ecole Polytechnique de Lausanne, February. 2004. Invited lecture;
- Riva del Garda, Congresso internazionale INTERPRAEVENT 2004, 24-27 maggio 2004 Invited lecture;
- Corso di aggiornamento: La progettazione di opere idrauliche in zona montana. Politecnico di Milano, 7-11 Ottobre 2002, Invited lecture;
- Convegno dell'Accademia Nazionale dei Lincei, Il Dissesto idrogeologico: inventario e prospettive. Roma, 5 Giugno 2001. Invited keynote;
- XXVII Convegno di Idraulica e Costruzioni Idrauliche; Genova, 12-15 Settembre 2000, Invited keynote;
- Corso di Aggiornamento Moderni Criteri di Sistemazione degli alvei Fluviali. Politecnico di Milano. 7° edizione Ottobre 1999; 6° edizione Ottobre 1998; 5° edizione Ottobre 1998; 4° edizione, Ott. 1997; 3° edizione Ottobre 1996; 2° edizione Ottobre 1995; 1° edizione Ottobre 1994. Invited lectures;
- Convegno dell'Accademia Nazionale dei Lincei, Il rischio idrogeologico e la difesa del suolo, Roma 1-2 ottobre 1998, Invited Speech;
- Seminario su "Nuovi Sviluppi Applicativi dell'Idraulica dei Corsi d'Acqua", in onore del prof. Claudio Datei, University of Padua. Bressanone, 1997, Invited lecture;
- Giornata di studio: Sicurezza del territorio: pericoli idrogeologici ed idraulici. Monte Verità-Ascona. Università Italiana della Svizzera; Ott.1996, Invited lecture;
- DAEST Istituto Universitario di Architettura Venezia, 1995, Invited lecture;
- Ecole Polytechnique Federale de Lousanne, Dicembre 1994, Invited lecture;
- 3rd International Conference on Floods and Flood Management, Firenze Nov.1992; Relazione generale su invito;
- University of Aberdeen, 1992. Invited lecture;
- International Symposium on Debris Flow and Flood Disaster Protection, Emeishan City, China, Oct. 1991, Invited lecture;

### **Editorial boards:**

- Journal of Disaster research; Editor since 2005;
- Journal of Engineering Geology and Environment; Member of the editorial board since 2006;
- Journal of Geoenvironmental Disasters. Editor since 2014;
- Journal ACQUA. Member of the editorial board since 2008;
- Journal of Hydraulic Research, Member of the Editorial Board 1992-2002.

### **European Union projects coordinator or head a research unit**

- IRASMOS, UE Project (VII programme), 2005-2008;
- Investigation of Extreme Flood Processes and Uncertainty (IMPACT). UE Project 2004-2004;
- Tidal Inlets Dynamics of Environment (TIDE). UE Project 2001-2004;
- Hydraulic, sedimentological and ecological problems of multifunctional riparian forest management (RIP\_FOR). UE Project 2000-2003;
- Torrent Hazard Control Risk and Mitigation (THARMIT). UE Project 1999-2002;
- Debris Flow II. UE Project 1997-2000;

- Eroslope II, UE Project 1997-2000 ;
- Osservazione, modellazione e controllo delle frane con l'ausilio di dati telerilevati, Progetto ASI-ESA 2000-2002;

## Most important recent publications

### Books or part of books

- Armanini A., *Principi di Idraulica fluviale*, Cosenza: Bios, 2005. p. 207. 88-7740-394-2.. Second edition.
- Armanini A., *Principi di Idraulica Fluviale*, Cosenza: Bios, 1999. p. 152. 88-7740-283-0
- A cura di Armanini A., Michiue M., *Recent developments on debris flows, Lecture Notes in Earth Science*. Berlin: Springer, 1997. vol. 64
- A cura di Armanini A., Di Silvio G., *Fluvial Hydraulics of Mountain Regions*. Berlin: Springer, 1991. Lectures Notes on Earth Science, vol. 37
- Armanini A., Fraccarollo L., Larcher M., Debris Flow. Cap. 142:Anderson M. G. (a cura di), *Encyclopedia of Hydrological Sciences*, vol. 4. Hoboken, N.J. ; Chichester: Wiley, 2005. p. 2173-2185
- Armanini A., Mountain streams. Cap. 143:Anderson M. G., McDonnell J. J. (a cura di), *Encyclopedia of Hydrological Sciences*, vol. 4. Hoboken, N.J. ; Chichester: John Wiley & Sons, 2005. p. 2187-2198
- Armanini A., Fraccarollo L., Larcher M., Controllo delle colate detritiche nell'ambito delle misure di salvaguardia territoriale. *Tecniche per la difesa dall'inquinamento*. Frega G. (a cura di), Cosenza: Bios, 2004, p. 235-270., 24.
- Armanini A., Fraccarollo L., Larcher M., Colate di detriti e tecniche di sistemazione idraulica. *La progettazione di opere idrauliche in zona montana*. Maione U., Brath A., Mignosa P. (a cura di), Cosenza: Bios, 2003, p. 511-546.

### Most important papers on ISI journals

- Armanini A. Closure relations for mobile bed debris flows in a wide range of slopes and concentrations. *Advances in Water Resources* (2015), <http://dx.doi.org/10.1016/j.advwatres.2014.11.003>
- Armanini, A., Cavedon, V., & Righetti, M. A probabilistic/deterministic approach for the prediction of the sediment transport rate. *Advances in Water Resources* (2014), <http://dx.doi.org/10.1016/j.advwatres.2014.109.008>
- Armanini A., Larcher M., Nucci E., Dumbser M. (2014) Submerged granular channel flows driven by gravity, *Advances in Water Resources* (ISSN: 0309-1708), 63, 0, p. 1-10
- Armanini A. (2013), Granular flows driven by gravity, *Journal of Hydraulic Research* (ISSN:0022-1686)- Vision Paper, p. 111 -120, 51, 2
- Armanini, A., Larcher, M., Odorizzi, M. (2011), Dynamic impact of a debris flow against a vertical wall, *Italian Journal of Engineering Geology and Environment* (ISSN:2035-5688), p. 1041 -1049, 2011, 11
- Ferrari A.; L. Fraccarollo; M. Dumbser; E.F. Toro; A. Armanini (2010), Three-Dimensional Flow Evolution after a Dam break, *Journal of Fluid Mechanics* (ISSN:0022-1120), p. 456 -477, 663
- Armanini A.; L. Fraccarollo; G. Rosatti (2009), Two-dimensional simulation of debris flows in erodible channels in: *Computers & Geosciences* (ISSN:0098-3004), p.993 -1006, 35, 5
- Zanuttigh B.; A. Lamberti; A. Armanini (2009), Experimental analysis of the impact of dry avalanches on structure and implication for debris flows Discussion in: *Journal of Hydraulic Research* (ISSN:0022-1686), p. 381 -383, 47, 3
- Armanini A.; M. Larcher; L. Fraccarollo (2009), Intermittency of rheological regimes in uniform liquid-granular flows, *Physical Review E, Statistical, Nonlinear, and Soft Matter Physics* (ISSN:1539-3755), p. 051306-1 - 051306-7, 79, 5
- Armanini A.; M. Righetti ; P. Grisenti ; I. Schnauder; C. Wilson (2009), Direct measurement of vegetation resistance in prototype scale Discussion in: *Journal of Hydraulic Research* (ISSN:0022-1686), p. 384 -386, 47
- Righetti M.; A. Armanini (2009), Closure to the discussion 'Direct measurement of vegetation resistance in prototype scale' in: *Journal of Hydraulic Research* (ISSN: 0022-1686), p. 384 -386, 2009, vol. 47, No. 3
- Ferrari A. ; M. Dumbser ; E. F. Toro ; A. Armanini (2009), A New 3D Parallel SPH scheme for Free Surface Flows in: *Computers Fluids* (ISSN:0045-7930), p. 1203 -1217, 38, 6
- Ferrari A., Dumbser M., Toro E. F., Armanini A., A New 3D Parallel SPH scheme for Free Surface Flows. *Computers & fluids*, 2009, DOI: 10.1016/j.compfluid.2008.11.012. Note: in press
- Ferrari A., Dumbser M., Toro E. F., Armanini A., A new stable SPH scheme in Lagrangian coordinates. *Communications in Computational Physics*, 2008, v. 4, n. 2, p. 378-404., Note: ISSN: 1815-2406
- Armanini A., Fraccarollo L., Larcher M., Liquid-granular channel flow dynamics. *Powder Technology*, 2008, v. 182, p. 218-227, DOI: 10.1016/j.powtec.2007.08.012
- Ferrari A., Dumbser M., Toro E. F., Armanini A., A New Stable and Consistent Version of the SPH Method in Lagrangian Coordinates. *ERCFTAC bulletin*, 2008, v. 76, p. 51-54.
- Fraccarollo L., Larcher M., Armanini A., Depth-averaged relations for granular-liquid uniform flows over mobile bed in a wide range of slope values. *Granular matter*, 2007, DOI: 10.1007/s10035-006-0035-x

- Larcher M., Fraccarollo L., Armanini A., Capart H., Set of measurement data from flume experiments on steady uniform debris flows. *Journal of hydraulic research*, 2007, v. 45, n. Extra Iss., p. 59-71.
- Armanini A., Righetti M., Grisenti P., Direct measurement of vegetation resistance in prototype scale. *Journal of hydraulic research*, 2005, v. 43, n. 5, p. 481-487.
- Armanini A., Capart H., Fraccarollo L., Larcher M., Rheological stratification in experimental free-surface flows of granular-liquid mixtures. *Journal of fluid mechanics*, 2005, v. 532, p. 269-319.
- Armanini A., Gregoretti C., Incipient sediment motion at high slopes in uniform flow condition. *Water Resources Research*, 2005, v. 41, n. 12, p. 1(W12431)-14(W12431)., Note: DOI 10.1029/2005WR004001
- Righetti M., Armanini A., Flow resistance in open channel flow with sparsely distributed bushes. *Journal of hydrology*, 2002, v. 269, p. 55-64.
- Armanini A., Larcher M., Rational criterion for designing opening of slit-check dam. *Journal of hydraulic engineering*, 2001, v. 127, n. 2, p. 94-104.

## **Patents**

PCT/IB2014/059684 12 marzo: “Struttura di ritenuta dei sedimenti in corsi d’acqua” (Structure for retaining sediment in watercourses).

September 1<sup>st</sup> 2015