



# THE WATCHFUL EYE OF HIGH-FREQUENCY MONITORING FOR INNOVATIVE PIPELINE SYSTEM MANAGEMENT

## Speaker

## Prof. Bruno Brunone

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## Abstract

Several strategies have been developed to reduce leakage in pressurized pipe systems, each addressing different aspects of the problem. In such a context, high-frequency monitoring of pressure has been proven to be effective in some relevant real systems to point out some critical issues. This seminar discusses the results of high-frequency field measurements for three real case studies from an operational perspective. The first case study involves checking the sealing of in-line valves installed in a long transmission main. The second case study focuses on a water distribution network in which a major user whose behavior generates frequent pressure oscillations has been identified. The third case study highlights the severe and frequent overpressures caused by a pressure-reducing valve (PRV) during periods of low flow.

## Biography

Bruno Brunone, with 40 as a total year research experience in research, received a M.Sc. (1983) and Ph.D. (1987) in Hydraulic Engineering from the University of Napoli 'Federico II' (Italy). He is a Professor, founder and Director of the Water Engineering Laboratory (WEL) of the University of Perugia, established in 1997. He is an Associate Editor of the ASCE Journal of Hydraulic Engineering and Journal of Water Resources Planning and Management; Journal of Marine Science and Engineering and Water, MDPI and the Italian Journal Servizi a Rete. He has been the chair of CCWI2013, WDSA2014 and 7th Groundwater Symposium of IAHR in 2015. Promoter and chair of the series of the Italian Confs on "Pipe System Management" (ten editions, since 2003). He is a co-chair of the CSDU-CSSI DAYS Int. Conf. on "Challenges and Perspectives in Urban Water Management Systems" (two editions, since 2025). Awards: 2026: Creativity Prize at the Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW) (team member); 2025: Int. Ass. for Hydro-Environment Engineering and Research (IAHR) Fellowship; 2018: J. C. Stevens Award by the Environmental and Water Resources Inst. (EWRI); 2016: Sustainability Award for the Portable Pressure Wave Maker (PPWM) device by H2O Bologna Int. Water Exhibition.



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**Wednesday**



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Civil Engineering  
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