

Curriculum Vitae of Marco Petti

Full Professor in Hydraulics and Maritime and coastal hydraulics at the University of Udine

He graduated with a MSc in Civil Engineering - hydraulics major - at the University of Florence, after a short period of freelance work and as an employee at the company Tecnomare S.p.A. in Venice, he embarked on his research doctorate path and in 1988 obtained the title of PhD in hydraulics. In 1990 he began working as a Hydraulics Researcher at the Department of Civil Engineering of the University of Florence. In 1998 he moved, as associate professor, to the University of Udine. Since 2005 he has been a full professor at the same University.

As part of his teaching activity, from 1993 to 1996, he taught "Coastal protection" and "Maritime hydraulics" at the University of Florence. From 1996 to 2011 he taught "Hydraulics", "Hydrology", "Fluid dynamics", "Hydraulic infrastructures", "Environmental hydraulics" and "River hydraulics" at the University of Udine. From 2011 to today he has held the "Hydraulics" course and the "Maritime and coastal hydraulics" course.

In the field of research, he has dedicated himself to topics specific to hydraulics and maritime and coastal hydraulics, both in the experimental and numerical fields. In particular, he was involved in the development of two-dimensional numerical models (FVM) for the study of rapidly varying free surface motions such as debris flows, avalanches, dam collapses and modeling for the study of flood waves in riverbeds with geometric complex. In the maritime field he has addressed topics regarding: the generation of irregular wave motion in the laboratory and in maritime and lagoon environments, non-linear transformations of sea waves during their propagation from offshore to near the coast, stability of coastal defense works, wave-induced turbulence in the breakers area and in the swash zone, solid transport and dispersion of pollutants in maritime and lagoon environments. He has also worked on modeling based on Boussinesq equations, with hybrid techniques (FVM-FDM), for the study of wave propagation in the presence and absence of structures, analytical/numerical study of fluvial-maritime interaction near river mouths and lagoons in the presence of wave motion.

As regards his key responsibilities in research projects, he was Scientific Coordinator of the site for 3 three-year editions of the European research projects MAST I-II-III (Marine Science Technology) (1989-2000); he was also a partner of the research project "Nonlinear Fourier structure of complex surface wave trains" in collaboration with the University of Turin which was funded by the Office of Naval Research (ONR - USA) for the period 1992-1995, and he was a partner of the CNR project "Marine engineering" from 1998 to 2001. He was the scientific director of the research project of the Friuli Venezia-Giulia Region "Hydraulic study aimed at a correct planning of interventions and maintenance works in the Tagliamento riverbed" (2005-2007). From 2015 to 2021 he was also scientific director of a research project in the Friuli Venezia-Giulia Region concerning the sedimentary dynamics of the "lagoon-sea" system, aimed at drafting the management plan for the Marano and Grado lagoon and managing interventions to be implemented at the lagoon inlets.

Regarding the third mission activity, he was a member of the technical-scientific commission established by the FVG Region for the identification of environmental safety criteria to be followed in the activation of dredging, transport and reuse of the sludge extracted from the Marano canals Lagoon and Grado. He was an effective member of the Technical Committee of the Regional Basin Authority of the Friuli-Venezia Giulia Region. Member of the CORILA Scientific Technical Committee (Consortium for the Management of the Coordination Center of Research Activities Concerning the Venice Lagoon System). He is a member of the "Laboratory Tagliamento" technical table, established by the FVG Region with the task of carrying out a broad-spectrum reconnaissance of possible alternative design hypotheses to expansion tanks.

In the academic field he has held numerous institutional roles, including: Department Director, Delegate of the Rector for construction, Member of the Academic Senate, Member of the Board of Directors, PhD coordinator, Degree Course President.