



**POLITECNICO**  
MILANO 1863

## **SEMINAR ANNOUNCEMENT**

Beltrami Room, Building 5, ground floor, Leonardo Campus  
**Department of Civil and Environmental Engineering**  
April 6<sup>th</sup> 2017, from 12:00 to 13:00

### **Flow of settling and complex slurries in pressurized pipes**

**Prof. Vaclav Matousek**

Department of Hydraulics and Hydrology  
Civil Engineering  
Czech Technical University in Prague

### **Abstract**

In the seminar, recent results will be presented of our work on physical and mathematical modelling of pipe flows of settling slurries (slurries with Newtonian carrier) and of complex slurries (slurries with non-Newtonian carrier) in a broad range of flow conditions. Different flow types, patterns and behaviours will be described and demonstrated on experimental observations of flowing slurries of different solids fractions (fine, medium, coarse, very coarse) and pipe geometries (horizontal, inclined, vertical) from test loops in two laboratories in Prague. Special attention will be paid to an internal structure of slurry flow (some flows tend to stratify) and flow conditions at flow boundaries and interfaces.

Appropriate modelling approaches will be discussed for a successful prediction of the frictional pressure drop in flows of particular slurries at particular flow conditions in pressurized pipes.

**Reference:** Dr. Gianandrea Vittorio Messa ([gianandrea.vittorio.messa@polimi.it](mailto:gianandrea.vittorio.messa@polimi.it))

### **Bio-sketch**

**Vaclav Matousek** is full professor of Water Engineering and Water Management at Faculty of Civil Engineering of Czech Technical University in Prague and Deputy Head of Dept. of Hydraulics and Hydrology at the same University. He is also research Fellow with the Institute of Hydrodynamics at the Academy of Sciences of Czech Republic.

His research activities has been focused primarily on two-phase flows with a special attention to pipeline transport of slurries, slurry pumping, rheology of mixtures, flow of rheologically active slurries, sediment transport in open channels and river morphology.

He has served as a project leader of national, international and industry-funded research projects in the Netherlands and Czech Republic. He is first author or a co-author of more than 30 peer-reviewed publications in international journals, more than 70 peer-reviewed contributions to international conferences, more than 30 industrial reports and 5 invited keynote lectures. In addition, he is Associate Editor of Journal of Hydrology and Hydromechanics and a member of Editorial Board of Civil Engineering Journal issued by CTU in Prague.

