Imaging methods in hydraulics:

Examples of Applications

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Imaging techniques are a powerful tool in many fields of science and have found remarkable success in fluid dynamics. This seminar is devoted to the application of imaging techniques to hydraulics related problems, such as the identification of interfaces (e.g. water-air) the measurement of velocity fields of both water and sediments, among others.

In this seminar, the fundamentals of Particle Image Velocimetry will be presented together with the advantages and disadvantages of such technique.

A practical session to introduce the use of PIV using a Matlab open source code will be made at the end of the session.

Short CV

Rui Aleixo completed his PhD 2013 in Engineering Sciences, Université catholique de Louvain, Belgium. Since 2008 has been working in the application and development of algorithms for image processing applied to hydraulics and sediment transport in different institutions, such as the National Center for Computational Hydrosciences and Engineering, of the University of Mississippi (USA), in Instituto Superior Técnico (Portugal), GHT Photonics and University of Bologna (Italy).

He was the chairman of the Experimental Methods and Instrumentation of IAHR between 2015-2017. During his tenure, the W.A.T.E.R Summer School (2016, 2017), an international summer school dedicated to experimental methods and instrumentation, was initiated in Belgium and the first edition of HydroSenSoft (2017), a conference on hydraulics, sensors and software, was organized in Madrid.

He has authored some articles and book chapters on instrumentation and their application for fluid mechanics.