

## Postdoctoral position offer with the company K-Epsilon: flooding simulation in complex urban zones

### **Project:**

The French company K-Epsilon has started a project call 3DSafe to model potential flooding hazards in complex urban zones. The aim of the project is to prove the feasibility of such simulations within reasonable time frames and computational power. The project is funded by the Provence-Alpes-Côte d'Azur region in France, and will try to reproduce the significant flooding that happened in October 2015 in this area.

Working with K-Epsilon and the Universidade de Vigo, the candidate will use numerical codes like SPH, IBER or HEC-RAS to simulate flooding flow on 3D urban landscape models reconstructed from aerial photogrammetry.

The first task will be to reproduce existing simulations with SPH to evaluate the performance and the accuracy of the code. Then, a comparison with other numerical codes will be led to analyse each code's abilities to address the complexity of the studied zone, their computational time, accuracy and constraints of use. The complexity of the models will be increased step by step.

Expertise in the following topics will be much appreciated: hydrological engineering, numerical simulation codes, SPH, free surface flows, shallow water equation codes, C++, CUDA, Fortran.

The working language will be English with knowledge of French or Spanish considered beneficial, but not mandatory. The post-doc will take place in Sophia-Antipolis, France and will include 2-3 months visit to the developers of dualSPHysics.

**Duration:** 1 year

**Date:** January 2017

**Salary:** To be negotiated

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