IST – LNEC Joint doctoral Initiative

Dissertation Proposal

TITLE: Numerical and Physical Modelling of Wave Propagation over Vegetation

Short Description
Objective: Development of numerical models for simulation of the wave propagation over vegetation in large coastal areas considering different kind of plants and incident wave conditions.

Methodology:
- **Theoretical study:**
  ○ **Inclusion of the vegetation motion and effects due to plant flexibility into SWAN-VEG and SWASH-VEG models.**
- **Validation: Existing data sets and physical model tests to be performed at LNEC.**
- **Sensitivity analysis:**
  ○ **Different types of vegetation;**
  ○ **Effects of density, submerged ratio, wave spectra shape and layers schematization.**
- **Application to a field case:**
  ○ **Tagus River estuary measurements campaign.**

Keywords: Vegetation, SWAN, SWASH, Physical modelling, Numerical Modelling, Field campaign

Supervisors:	
IST: António A. Pires-Silva	LNEC: Conceição Fortes

Planned start date: February, 2017	Doctoral Program: Civil Engineering, IST