~~~~~~

A **2 year post-doctoral position** has opened at the University of Bologna, Department of Physics and Astronomy, Group of Interdisciplinary Oceanography on the topic of:

~~~~~~

Numerical modelling of coastal erosion and inundations in the Emilia Romagna coasts for nature based solutions

In the framework of the H2020 project Operandum, UNIBO is in charge for the study of sediment transport, coastal erosion and inundation for the Emilia- Romagna coasts in the present and future climate in support of "nature based" solutions that will reduce the impacts on the coasts. The simulations will help to define:

1) The circulation, coastal erosion and inundation regimes of this area in the present and future climate (2010-2020 vs 2040-2050);
2) The impact of indigenous seaweeds on the wave and currents thus changing the erosion and inundation regimes.

To this end, the oceanographic unstructured grid model SHYFEM (https://sites.google.com/site/shyfem/) should be implemented in the area of interest and coupled with:

1) a wave model (WW3 or SWAN);
2) a sediment transport model (already a SHYFEM module);
3) a simplified, low order model of the seaweeds that will parameterize the critical stress for re-suspension and the bottom frictional drag coefficient.

Two types of simulations should be carried out:

1) Simulations of coastal erosion and inundation for the present climate (2010- 2020)
2) Simulations of coastal erosion and inundation for a high resolution climate change scenario (2040-2050).

The simulations will be repeated in both periods with and without the model of benthic seaweeds.
It is possible that some physical laboratory experiments will be carried out to check on the parameterization of the seaweeds critical stress and frictional coefficients.

~~~~~~

Details of the application are given here:

https://www.aricweb.unibo.it/BandiPubblicati/zz_Bandi_din.aspx?strid=957

Deadline is February 1, 2019. To submit an application please use:

https://personale.unibo.it/pol/welcome.htm?siteLanguage=en

For further information contact Nadia.Pinardi@unibo.it or Marco.Zavatarelli@unibo.it