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MARITTIMA



**20<sup>st</sup>**  
**SEPT**  
**2022**

**Workshop**  
**An Introduction to beach  
morphodynamics**  
**Francesca Ribas Prat**

**9,30-**  
**12,30**  
(CET Italy time)

**On line through Webex:**

<https://unifirenze.webex.com/unifirenze/j.php?MTID=m5c1f63c37276d401cd2655b505eb44d4>  
(Meeting number: 2744 418 0959 - Password: 3dmP2E2bWMd - By phone +39-069-974-8087 Italy Toll 390230410440 Italy Toll 2)

Workshop organized by  
GeCo Lab - Geomatics for environment and conservation of cultural  
heritage laboratory - [www.geomaticaeconservazione.it](http://www.geomaticaeconservazione.it)  
and LABIMA - Maritime Engineering Laboratory - [www.labima.unifi.it](http://www.labima.unifi.it)  
[www.dicea.unifi.it](http://www.dicea.unifi.it)

## Abstract

*The seminar will be a short introduction to beach morphodynamics. It will start with an introduction including the motivation and some preliminary aspects, followed by a section describing the processes experienced by wind waves when they approach the shore. The third section will cover the essential hydrodynamic processes at the beach: mean currents and sea surface changes. After a break, we will dive into the longest and final section, which will contain a description of many aspects related with the sediment transported by waves and currents, as well as the changes produced in bed level. The processes will be mainly described from a conceptual point of view but also providing some clues of how to quantify them with a mathematical model.*

## Agenda

9:30 - 11:30 Speech

11:30 - 12:30 Q&A



*Dr. Francesca Ribas graduated in Physics from the Universitat de Barcelona (Spain) and received her Ph.D. in Jan-2004 at the Department of Physics of the Universitat Politècnica de Catalunya (UPC, Spain), specialising on the mathematical modelling of physical processes governing coastal morphodynamics, with emphasis on the mechanisms behind nearshore sand patterns. During the 4-yr postdoctoral period at Utrecht University (UU), The Netherlands, and at Institut de Ciències del Mar (ICM), Spain, she focussed on field*

*observations to fill in the large existing gap between the theoretical results on nearshore patterns and available data, specialising on data acquisition using remote sensing with video cameras. In Sep-2007, she got a full-time position, to later become Associate Professor at the Department of Physics of UPC. Since then, she combines her research activity with teaching responsibilities. Apart from continuing her research on nearshore patterns she has also worked on large-scale shoreline dynamics, including the modelling of beach nourishments and the effects of climate change. At present, her primary academic interest is unravelling the physical processes that dominate the dynamics of sandy coasts at scales from hours to decades, with the goal of increasing the presently-limited predictive capacity of mathematical models and unveil the future of these complex systems of high ecologic and socio-economic value. Throughout her career, she has published about 30 articles in JCR journals (20 in Q1 journals), participated in about 100 conferences (including invited talks) and supervised 3 PhD thesis. She has also participated in 10 scientific projects funded by the Spanish government, being PI in the two last ones, and in 3 European projects.*

Participation is free but please send an email to register yourself to [Francesco.mugnai@unifi.it](mailto:Francesco.mugnai@unifi.it)