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ALBERT HERRERO

- I am a researcher in Hydrology and Hydraulics (9 years of international working experience)
- My main areas of expertise are: hydrology, fluvial hydraulics, sediment transport and geomorphology
- I like multidisciplinary approaches and facing the problems from a transversal point of view. I believe in the combination of theoretical and practical approaches in order to apply science for social and environmental problems

RESEARCH and TEACHING EXPERIENCE

Postdoc research. ICRA (Catalan Institute for Water Research), Girona. 2016–present

Topics:
- Hydrological modeling. Calibration and validation. Analysis of climate change scenarios
- Sediment production at the catchment scale. Numerical modeling. Calibration and validation. Global change scenarios
- Transport and fate of sediment-associated contaminants. Field work. Coupling with hydrological and sediment models.

Publications:
- 1 peer-reviewed (accepted) journal publications and 1 publication in conference proceedings.

Postdoc research. IRSTEA (National Research Institute of Science and Technology for Environment and Agriculture) 2013–2015

Topics:
- Fine sediment infiltration into a river bed: experimental series, analytical and numerical modeling, restoration strategies
- Incipient motion in bimodal beds: laboratory work, collaboration in supervision of PhD thesis
- 2D-sediment transport in trapezoidal channels: evolution of a channel with trapezoidal section. Applications to navigability

Projects:
- FISME. Analytical modeling of sediment mass exchange across sediment-water interface. Collaboration with University of Melbourne

Publications:
- 2 peer-reviewed (1 accepted and 1 submitted) journal publications and 6 publications in conference proceedings.

PhD research. BarcelonaTech University. Sediment Transport Research Group (GITS). 2008–2013

Topics:
- Stability of fluvial bifurcations: flow and sediment transport characteristics in a fluvial bifurcation. Strategies to modify sediment transport. Construction of physical model. Experimental series. Analytical modeling.
- Flood risk management: evaluation of channel capacity and design of flood protection infrastructures (HEC-RAS model)
- Sediment production at the catchment scale: field monitoring of experimental basins
- Applications of civil engineering in developing countries: water supply, waste management, water treatment, urban planning

Projects:
- MEDDMAN. sediment erosion in mountain catchments: Quantification of reservoir capacity loss
- Design of flood protection infrastructures in Cambrils (Spain): numerical modeling and proposal of alternatives
- Water management system in Puerto Napo (Ecuador): design of water supply and sewerage systems
- Urban planning of Bocas de Satinga (Colombia): design of wood walkways, water supply system, waste management
- Water supply and general development of Adengur School (Woldiya, Ethiopia) and Azeba School (Sekota, Ethiopia)
- Development of 4 research proposals.

Publications:
- 3 peer-reviewed journal publications and 9 publications in conference proceedings.

Teaching:
- Lecturer, teaching assistant, co-supervisor of MSc and BSc theses in the Hydraulics Department.
- Teaching assistant in the HEC-RAS training course: theory and practical applications

Teacher. ASES Academy. Barcelona. Support courses for Civil Engineering students. 2003–2007

Topics:
- Mechanics (kinematics, dynamics, structures) and mathematics (differential geometry, ordinary differential equations)

ACADEMIC BACKGROUND

PhD Thesis. BarcelonaTech University (UPC). Hydraulics Department (DEHMA). 2013

Dissertation: Experimental and theoretical analysis of flow and sediment transport in 90-degree fluvial diversions
Advisor: *Allen Bateman.* Committee: *J.P. Martín-Vide, A. Falqués, E. Peña, M. Bolla-Pittaluga, G. Parker*

Master Degree. Physics. University of Barcelona (UB) 2009

Master Degree. Civil engineering (Eng. Camins, Canals i Ports)**.** BarcelonaTech (UPC). 2007

FURTHER INFORMATION

- Languages: Spanish (C2 equiv. native), Catalan (C2 equiv. native), English (C1 equiv.), French (C1 equiv)
- Computer and technical skills: hydrological and sediment modeling (TETIS), hydraulic modeling (HEC-RAS), numerical methods and analytical modeling (Matlab), extensive data analysis and statistical skills (Microsoft Excel, R, Python), GIS (ArcGIS).