

The course will be limited to 30 participants in order of registration.

**Fees:** 100€ for Scarce students (early registration: 75€ before September 1<sup>st</sup>) and 125€ for non-Scarce students (early registration: 100€ before September 1<sup>st</sup>). Fees include the course inscription, lunch and documentation. Please, make a transfer to the following account (expenses for the sender):

- Account owner: ADECIT. Associació per al Desenvolupament de la Ciència i > la Tecnologia; SCARCE. Course UdL-IDAEA
- Bank: La Caixa
- IBAN number: ES70 2100-0655-780200202561, SWIFT code: CAIXESBB
- Specify concept: Scarce Course UdL-IDAEA and participant name

Online registration is opened at [www.idaea.csic.es/scarceconsolider](http://www.idaea.csic.es/scarceconsolider) until **10<sup>th</sup> October 2012**



**SCARCE-Consolider CSD-2009-00065**

## Advanced Course

### ORGANIZERS

- University of Lleida (UdL) / Fluvial Dynamics Research Group (RIUS)
- Institute of Environmental Studies and Water Research (IDAEA-CSIC)

*in collaboration with*

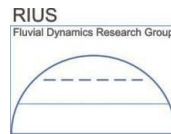
- Forest Science Center of Catalonia (CTFC)
- Agència Catalana de l'Aigua (ACA)
- Catalan Institute for Water Research (ICRA)
- University of the Balearic Islands (UIB)
- Polytechnic University of Valencia (UPV)

*Note: The course will take place at IDAEA-CSIC, c/ Jordi Girona 18-26, 08034 Barcelona*

*For accommodation options see [www.scarcecourse.fluvialdynamics.com](http://www.scarcecourse.fluvialdynamics.com)*



Universitat de Lleida



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**Barcelona (Catalonia, Spain)**  
**October 15-16, 2012**  
[www.scarcecourse.fluvialdynamics.com](http://www.scarcecourse.fluvialdynamics.com)

**RIVERS** are among the most complex and dynamic systems in nature. They constitute natural units characterized by more or less frequent transfer of water and sediments that, in turn, support life. While moving through streamcourses, **water and sediments** connect all river compartments, from the basin headwaters to the lowland deposition zones. Sediment that is supplied from drainage basins to rivers (from fines to sand, gravels and coarser materials) constitutes the essential element of the physical structure of the channels and the habitat for the numerous species of animals and vegetation. The failure to appreciate the fundamental role of sediments in rivers functioning underlies some of the current environmental problems in stream conservation and management. Therefore there is a need to highlight the role of **sediment transport** and associated **river dynamics** towards a better understanding of fluvial processes and their relation and adjustment to various human impacts (i.e. regulation, gravel mining, etc.). In addition, channel morphology and its sedimentary structure integrate long-term effects of changes in the land use and the basins hydroclimatic characteristics. This is one of the central goals of the **SCARCE** Project, within which this course is scheduled.

**The 2-days advance course is designed for graduate students, PhD students and researchers** interested on understanding sediment transport and associated processes and the role played by major impacts on sediment budgets from the catchment to the reach scale. Course include theoretical and practical aspects, including an introduction to the application of advanced **monitoring techniques** to the analysis of river's morphodynamics and the design of advanced **restoration practices** in regulated river systems. 60-minute lectures given by experts from various research areas followed by open discussions on case studies constitute the general framework of the course.

#### COURSE STAFF

- ✓ Ramon J. Batalla (University of Lleida)
- ✓ Joan Estrany (University of the Balearic Islands)
- ✓ Félix Francés (Polytechnic University of Valencia)
- ✓ Celso Garcia (University of the Balearic Islands)
- ✓ José A. López-Tarazón (University of Lleida)
- ✓ Damià Vericat (University of Lleida)

#### PROGRAMME

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##### 15<sup>th</sup> October

Morning Session 9<sup>00</sup>-13<sup>00</sup>. Sediment transport and yield: Transfer processes from the catchment slopes to the channels.

- Joan Estrany (University of the Balearic Islands)
- José A. López-Tarazón (University of Lleida)

Discussion of case studies and data analysis. Connectivity between source areas and drainage network under different hydroclimatic and land use settings.

Afternoon Session 14<sup>30</sup>-18<sup>00</sup>. Characterization of river bed sediments and monitoring channel morphodynamics.

- Celso Garcia (University of the Balearic Islands)
- Damià Vericat (University of Lleida)

Discussion of case studies and data analysis: Grain-size distributions, river-bed structure and bedload transport.

##### 16<sup>th</sup> October

Morning Session 9<sup>00</sup>-13<sup>00</sup>. Modelling of sediment transport and management of channel processes.

- Félix Francés (Polytechnic University of Valencia)
- Ramon J. Batalla (University of Lleida)

Discussion of case studies: Modelling of sediment transport at catchment and channel scales and design of flushing flows in regulated rivers.

Afternoon Session 14<sup>30</sup>-17<sup>00</sup>. Course synthesis and further discussion i.e. Human impacts on sediment dynamics and the role of sediment transport in global change scenarios. Round table with teaching staff and open debate.