

## Call for 4 Post-Doctoral Research Positions under Project SEDITRANS

The project SEDITRANS entitled “Sediment transport in fluvial, estuarine and coastal environment” and funded under the Marie Curie FP7-PEOPLE-2013-ITN program of the European Union will provide an elaborate and interdisciplinary training-through-research program to Experienced Researchers (ERs) holders of a recent PhD degree.

At this time, SEDITRANS invites applications for 4 ER positions to start on September 2014. Information about SEDITRANS, the participating partners, the description of the positions and the rules of the program (for example, about eligibility and salary) can be found at the [website](#) of SEDITRANS. Interested applicants are encouraged to contact directly the corresponding scientist of each position and apply before **June 30, 2014 (new deadline)**.

Note that in order to be eligible for these positions, applicants must meet the following mobility criterion: *at the time of the relevant deadline for submission of proposals, or recruitment by the host organisation, depending on the action, researchers shall not have resided or carried out their main activity (work, studies, etc) in the country of their host organisation for more than 12 months in the 3 years immediately prior to the reference date. Compulsory national service and/or short stays such as holidays are not taken into account.*

Questions about the program may also be directed to the SEDITRANS coordinator.

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### 1. Post-Doctoral Position at the University of Patras, Greece

*Project title:* “Parallel numerical simulations of coastal flows”  
*Location:* Dept. of Civil Engineering, Univ. of Patras, Patras, Greece  
*Requirements / eligibility:*

- English or Greek Language
- PhD degree in engineering, physics or related disciplines
- Candidates should have skills in programming using Fortran or C++ language and be able to work in Linux/Unix environment

*Objectives:*

- Application of parallel code to wave propagation and breaking with bed and suspended sediment load
- Three-dimensional wave breaking in turbulent coastal flows
- Bed and suspended sediment transport induced by waves in coastal flows

*Job description:*

- Implementation of MPI parallel protocol on existing serial code for wave propagation and breaking over rigid bed
- Incorporation of sediment transport models in the above code and simulation of coastal sediment transport and bed morphology evolution
- Validation of numerical code against experimental measurements for wave breaking and coastal sediment transport
- Documentation of computational test cases

- Preparation and submission of articles in international peer-reviewed journals and/or conferences

Interested applicants are encouraged to send a detailed CV, a statement of research interests, and names of two references to Professor A. Dimas ([adimas@upatras.gr](mailto:adimas@upatras.gr)).

## 2. Post-Doctoral Position at EPFL, Switzerland

*Project title:* Turbidity currents, knowledge transfer from academia to practical engineering

*Location:* Laboratory of Hydraulic Constructions, École Polytechnique Fédérale de Lausanne, Switzerland

*Requirements/eligibility:*

- PhD degree in engineering, physics or related disciplines
- English proficiency
- Candidates should have competences in sediment transport, fluvial hydraulics, fluid mechanics or turbulence
- Acquaintance in experimental and numerical work is welcome

*Objectives:*

- Follow the work on turbidity currents performed by an early stage researcher.
- Connection and knowledge transfer from academic results to engineering praxis.

*Job description:*

- Co-supervise experimental work on turbidity currents performed by an early stage researcher, including simulation of preventive measures.
- Calibration and validation of numerical models developed under the framework of the project to simulate flows reproduced in laboratory.
- Application of numerical models developed under the framework of the project to simulate case-studies provided by industrial partners.
- Participate in the elaboration of practical operational guidelines to deal with reservoir sedimentation problems related to turbidity currents (interaction with industrial partners).
- Preparation and submission of articles in international peer-reviewed journals and conferences.

Interested applicants are encouraged to send a detailed CV, a statement of research interests, and names of two references to Professor Anton J. Schleiss ([anton.schleiss@epfl.ch](mailto:anton.schleiss@epfl.ch)) or Dr. Mário J. Franca ([mario.franca@epfl.ch](mailto:mario.franca@epfl.ch)).

## 3. Post-Doctoral Position at Indrostudi, Italy

Idrostudi srl is seeking for a candidate with a PhD degree (or at least 4 years of equivalent research experience) for an Experienced Researcher position within the Marie Curie Initial Training Network “SEDITRANS”.

Main tasks of the ER’s activity will be:

- (1) the development of a software package whose core will be the numerical model developed by the University of Trieste within the SEDITRANS project in order to obtain a valuable tool that could be applied in river and coastal environment for real cases;
- (2) Application of the model to erosion problems in an estuarine flow.

The candidate must have proficiency in programming in Fortran, C++, and Java languages, and knowledge of Matlab as well as very good English language skills. A strong interest in hydrodynamic modeling for the analysis of solid transport, in interdisciplinary and application-oriented work, and

experience in experimental work are required. Experience with parallel computing with MPI is appreciated.

Apart from independently conducting cutting-edge research leading to publications, the experienced researcher is expected to cooperate with the early stage researchers in the SEDITRANS Initial Training Network.

The position is for twenty months and interaction with research groups of the network and other stakeholders will be encouraged. Interested applicants are encouraged to send a detailed CV, a statement of research interests, and names of two references to Dr. F. Zanello (zanello@idrostudi.it).

#### **4. Post-Doctoral Position at Stucky, Switzerland**

*Project title:* “Engineering applications on fluvial projects”

*Location:* STUCKY Ltd, Renens, Switzerland

*Requirements / eligibility:*

- PhD degree in engineering, physics or related disciplines or 5 years of experience in research
- Competences in river hydraulics, fluid mechanics and turbulence, as well as in programming are welcome
- Master degree in Engineering (Civil, Environmental, Mechanics or related fields)
- English proficiency (written and spoken, B2 level)

*Objectives:*

- Testing and validation of models developed within the project by academic partners in real engineering problems in the fluvial domain.
- Contribute to experimental modeling planning and guideline manuals for practical applications.

*Job description:*

- Supervision and follow-up of academic trainees in the application of numerical developments produced in different work packages by academic partners to two real cases in order to test and validate these.
- Collaborate on the implementation user-friendly recommendations to end-users of the numerical developments produced in different work packages by academic partners.
- Collaborate on the definition of experimental work on turbidity currents.
- Collaborate on the elaboration of operational guidelines for preventing measures on reservoir sedimentation.
- Preparation and submission of articles in international peer-reviewed journals and/or conferences

Interested applicants are encouraged to send a detailed CV, a statement of research interests, and names of two references to rh@stucky.ch.