



Research fellow in integrated modelling of sediment transfer in mountainous catchments and of protection strategies (M/F) Grenoble (38), FRANCE

Research area : **Fluid mechanics, hydraulics**

Recruitment

Type of recruitment: open competitive exam (state civil service)

Terms: Position open to candidates with a PhD

(In some cases and under certain conditions, applicants may request for recognition of equivalence of diplomas that are not in the list of qualifications required for this examination, diplomas issued or recognized by a Member State of the European Union or the States Parties to the agreement of the European Economic Area, or the professional qualification obtained).

Job's description

Irstea is the National Research Institute of Science and Technology for Environment and Agriculture. Its four main scientific research areas are: **Risks**: Natural, health and environmental risks, **Bioeconomy and circular economy** of bio-resources and effluents: from technologies to actors, **Adaptive resource management** in territories constrained by global change and **Biodiversity**: Dynamics and management of ecosystems and ecosystem services. Having become a key player in both French and European research, the Institute carries out research in support of public policies and in partnership with industry. It employs 1,200 people across nine regional centers in France. As an ISO 9001 certified institution, Irstea has also received the French CARNOT label, which acknowledges its long-standing research partnerships with socioeconomic actors, within both the private and the public sector. From 1st January 2020, Irstea will pursue its research activities under a new organisation following the merger with National Institute for Agronomic Research (Inra).

Within the Waters scientific department, you will be affiliated to the STRIM team (sediment transport, geomorphology and environment) of ETNA research unit (torrential control, snow and avalanches). ETNA unit conducts research on the prevention of natural hazards in mountain environments (avalanches, snowdrift, torrential floods and debris flows, rock-falls, glacial hazards). The research studies are focused on the triggering and propagation of mass movements, flux and landform dynamics, interactions with elements at stakes, and risk evaluation and decision-support in a context of rapid and pronounced environmental changes. The research unit is comprised of 16 scientists, 8 technical staffs, and about twenty post-doctorate researchers and PhD-students. The research unit is associated with the University Grenoble-Alpes, and currently engaged in a project of merging with the Institute for geosciences and environmental research (UMR IGE).

Your tasks will consist in conducting and animating research activities on the integrated (or holistic) modelling of interactions between complex natural flows, sediment transport, and morphodynamics. Your works will contribute to improve the analysis of risk mitigation strategy efficiency, taking into account environmental issues (sediment continuity) and global change. Your developments will be supported by the different activities carried out in the research unit concerning observation and modelling of natural flows and flow-infrastructure interactions. You will seek to adequately characterize uncertainty and imperfect information propagation in the data-model-application continuum. Your activity will directly participate to the capitalization and valorization of data, tools and methods developed within the unit, in order to strengthen its research capacity and the interface with practitioners/managers. You will participate to expertise and engineering support activities of the research unit.

Your primary activities will be to build collaborative research projects, disseminate and transfer your academic results (publications, communications, expertise activities), mentor trainees, PhD-students and post-docs, and participate to the scientific animation of the STRIM team and ETNA research unit. You will maintain and develop collaborative relationships not only with the sediment transport and hydraulic modelling community, but also with public and private partners involved in natural hazard management.

Required profile

PhD Holding a PhD in fluid mechanics and/or earth sciences, you have a high-level background in modelling of natural flows, sediment transport, and morphodynamics. Complementary skills in GIS/remote sensing data processing are also expected. Knowledge about natural hazard protection strategies and approaches for decision modelling would be appreciated.

You have a successful initial experience with approaches of integrated modelling at intermediate scales (catchment-scale), and you wish to invest in research works linked with environmental and natural hazard prevention issues.

You are rigorous, organized, quick to react. You master scientific communication in English and you show excellent team-working skills.

	Level required			
	Advanced	Pre-advance	Intermediate	Beginner
Knowledge				
Hydraulics, sediment transport, morphodynamics	X			
Integrated modelling in geosciences		X		
Natural hazards and risks, protection strategies			X	
Decision modelling				X
English language	X			
Skills				
Tools for modelling of natural flows		X		
GIS and remote sensing data processing		X		
Project management			X	
Scientific communication	X			
Social skills				
Autonomy, team work		X		
Rigour, organization, reactivity	X			

Work conditions and environment

Access facility

Ground floor	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
Elevator	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Public transport	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Car park	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no

Work environment

Institution catering	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Works council	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no

Work conditions

- ✓ Working time per week : 38h40 (27 days of annual paid leave and 20 days off) or 36h20 (27 days of annual paid leave et 7 days off), for a full time of calendar year.
- ✓ Remote work (depend on eligibility criteria).

Social benefits (depend on eligibility criteria)

- ✓ Health insurance: possibility to subscribe to one of 6 referenced health and life insurance policies.
- ✓ Holiday vouchers.
- ✓ CESU (Universal Employment Services Voucher).

Training

- ✓ Support after the appointment.
- ✓ Possibility to follow training to develop professional and personal skills.

For more information

You can contact :

- ⇒ Florence NAAIM, head of UR ETNA, florence.naaim@irstea.fr (+33) 4 76 76 27 09
- ⇒ Guillaume CHAMBON, deputy-head of UR ETNA, guillaume.chambon@irstea.fr (+33) 4 76 76 27 66

To apply

Application form can be obtained:

- on the website: www.irstea.fr link "Nous rejoindre" and then link "concours externes"

- or by contacting the recruitment centre: concours@irstea.fr - (+33) 1 40 96 60 37 or 65 67

Full application should be submitted before **14th March 2019** and sent to :

Irstea

Direction des ressources humaines et des relations sociales

Pôle recrutement, mobilité et développement des compétences

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