Annonce de conférence

Lundi 28.11.2016 à 16:15, Salle GC C2 413 (Génie civil)
(http://plan.epfl.ch/?lang=en&room=GC+C2+413)

Dr Guillaume Piton, IRSTEA, Univ. Grenoble Alpes, France

Surveying sediment traps/bedload transport to better understand bedload transport/sediment traps

Abstract: Mountain streams are a major sediment source for some rivers; however, they can also be responsible for substantial damage, particularly during sediment-laden floods, eroding banks and structures, or obstructing rivers beds and bridges by depositing sediment. Stabilizing river beds and trapping sediment - in specially designed structures - occupies engineers since the mid-19th century. Sediment traps (debris basins closed by open check dams) now equip hundreds of torrents in the Alps. These structures have generally been designed using fuzzy criteria since the physics of sediment transport processes (bedload transport, debris flows and woody debris recruitment) are far from being fully understood. These key structures for hazard mitigation greatly helps us better understanding sediment transport dynamics.

The presentation will remind why it is sometimes necessary to trap sediment, and thus to design structures following "design scenarios" adapted to the local sediment supply processes (Fig. 1). We will discuss a new way to account for heavily armoured beds in computing bedload transport, validated on streams yet equipped with sediment traps. Observations of sediment depositing in sediment traps will finally be compared to small scale model results, allowing new preliminary recommendations for sediment trap design to be given.

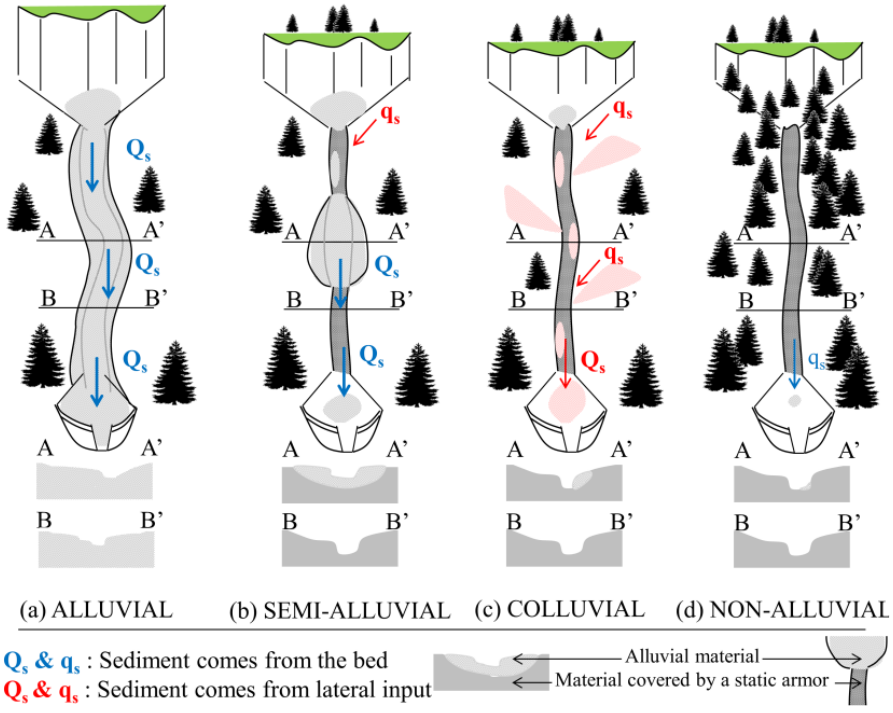

Figure 1. Geomorphic contexts in which sediment traps may be installed, with diverse sediment sources and sediment transport dynamics.

Bio: Dr Piton Guillaume is a postdoctoral fellow in the "*Erosion Torrentielle, Neige et Avalanche"* unit of IRSTEA, Grenoble Alpes University. His research focuses on mitigation structures and sediment transport in mountainous catchments, more specifically on check dams and open check dams. Before joining IRSTEA, he worked at ARTELIA as an engineer on hydraulic structures and flood risk management. http://www.irstea.fr/piton

Durée de la conférence: env. 45 minutes, suivie d'une discussion.

Prof. Dr Anton SCHLEISS & Dr Pedro MANSO

en partenariat avec le

SCCER SoE
SWISS COMPETENCE CENTER for ENERGY RESEARCH
SUPPLY of ELECTRICITY