



Multi-scale survey of Suspended Sediment Concentration in the Bleone river basin (Southern French Alps)

O. Navratil (1), M. Esteves (1), J. Nemery (1), C. Legout (1), A. Poirel (2), N. Gratiot (1) and P. Belleudy (1)

1. LTHE, Laboratoire d'Etude des Transferts en Hydrologie et Environnement, Grenoble, France (oldrich.navratil@hmg.inpg.fr, michel.esteves@hmg.inpg.fr)
2. Electricité De France

In mountainous areas, especially in the French Alps, a reduced number of Suspended Sediment Concentration (SSC) data are available to evaluate properly annual flows and spatiotemporal variability. This lack of high temporal resolution data is very restrictive for scientific studies as well as for river management such as hydraulics works or water resources and ecological requirements. In this context, the STREAMS project aims to improve the knowledge of suspended sediment dynamics using a nested sub-basins approach. The Bleone river basin (Southern French Alps; 960km²) was equipped with six hydrometric stations with high frequency water discharge and SSC acquisition. Their basin area ranges from 20 km² up to 870 km², with various geology and land use. The Bleone river basin is characterized by a low human impact (no dam, very low urbanisation). At each station, SSC is estimated with turbidity measurement, calibrated with water samples collected by an automatic turbidity-controlled sampler. This presentation describes the instrumentation methodology and analyses the preliminary results obtained from the 2007 fall and winter flood events. This work corresponds to the first step of a larger study covering (1) trace element geochemistry of sediments (2) sediment source mapping and (3) suspended sediment transport modelling. All these data will also provide an original new data set to analyse temporal and spatial variability of suspended sediment transport for increasing river basin sizes.