

Analysing and modelling of sediment transfer in Mediterranean landscapes: hillslope processes, river system connectivity and reservoir yields.

Analysing and modelling sediment transfer posing a special emphasis in understanding connectivity in hydrological systems is important given the degree to which such connectivity has been impaired by human activities worldwide, e.g. by water abstraction and reservoir construction. In Mediterranean-climate regions, which are exposed to the hazard that available water resources fail to meet water demand, the assessment of water and sediment fluxes are a prerequisite for sustainable water and sediment management. These regions often experience strong erosion in headwater catchments, resulting in reservoir sedimentation and a loss of retention volume which can lead to a significant reduction of water availability within few decades.

Main goals of this session are the analyses of connectivity processes between water and sediment delivering, accepting and transporting compartments, including the analysis of transfer routes and storage capabilities, the quantification of leakiness and landscape fragmentation, the application of innovative sediment tracing techniques, and the identification of major sources, stores and fluxes of sediments through remotely sensed data and all other techniques which could result in an enhanced process understanding of connectivity. Previous goals are summarized in a last one referred to modelling of water and sediment transport from hillslopes to rivers and finally to reservoirs, and at their intersections. We encourage contributions dealing with the improvement of the knowledge and modelling capability of connectivity processes of water and sediment fluxes at spatial scales relevant for water and land management mainly for the Mediterranean environments. We plan to publish selected contributions from this session in a special issue of Hydrology and Earth System Sciences, Geomorphology or any other related journal.