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**Session abstract**

Title: Understanding sediment processes at catchment scale

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Sediment as an essential condition for the hydrological, geomorphological and ecological functioning of river basins, as a pollutant in its own right, and as a vector for other associated contaminants, crosses many traditional management sectors, and is subject to many sets of legislation or regulation. There are often multiple sources of sediment affecting multiple management objectives in locations throughout river basins, and the transfer pathways between source and impact are often long and complex. Mobilisation and movement of sediment is often associated with high energy, high flow events, and few monitoring programmes adequately address this part of the flow range. Climate change predictions are for such events to become both larger and more frequent, and the resultant shift in flow distributions will mean that rivers will remobilise, releasing both sediment and legacy contaminants from floodplains and river banks and bed. Changing physical and chemical conditions may also mean that sediment-bound contaminants will behave differently in future.

Meanwhile, the European Water Framework Directive (WFD) requires us to manage our water environment at catchment scale. This is perhaps more complex for sediment than for other contaminants because of the episodic nature of sediment transfer, long storage times within the system and the wide range of associated contaminants. However, for many river basins in Europe sediment and/or associated contaminants form one of the major barriers to meeting WFD requirements. There is therefore an urgent need to develop approaches based on process understanding for sediment management at catchment scale.

This session will welcome papers on catchment scale management approaches, improved process understanding and implications of a changing environment on sediment management at the river basin scale.