

## ICWRER conference, Koblenz 2013

### Session abstract

Title: Improving water quality management using new water quality modeling and observation strategies

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Legal requirements like the European WFD, the Nitrates Directive, the Marine Strategy Framework Directive and the Groundwater Directive pose new challenges for the assessment and sustainable management of water quality of surface waters as well as groundwater bodies on the catchment scale. Therefore models are needed with predictive capabilities under changing land use and climate conditions which fulfill the increasing needs for decision making. Additionally, water quality assessment covers the chemical and ecological status and needs to link the hydrological view on aquatic ecology. However, water quality calculations are affected by errors in input data, model errors, inappropriate model complexity and process knowledge. Therefore new strategies combining modeling and monitoring are needed to improve the prediction capabilities of hydrological water quality models at the management scale. Contributions are welcome dealing with modeling techniques ranging from simple GIS based approaches up to deterministic process based hydrological water quality models and river water quality models which investigate

- the value of high resolution monitoring techniques for model identification
- remote sensing and modeling
- use of models in the design of monitoring strategies
- upscale small scale management measures at the catchment scale (e.g. buffer strips)
- dependency between Model complexity and model uncertainty
- eutrophication and micropollutants in streams and rivers
- Case studies on climate change impacts and WFD projects