

Advanced Tools and Models to Improve River Basin Management in Europe in the Context of Climate Change

Advanced Tools and Models to Improve River Basin Management in Europe in the Context of Climate Change - AquaTerra has developed from an integrated project of the 6th EU RTD Framework Programme that aims to provide the scientific basis for an improved river basin management through a better understanding of the river-sediment-soil-groundwater system as a whole, by integrating both natural and socio-economics aspects at different temporal and spatial scales.

This book aims:

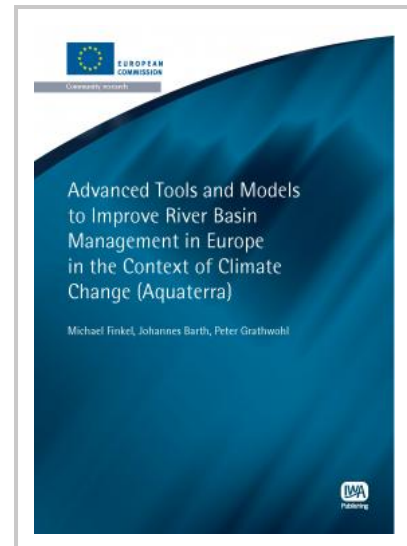
- to provide better understanding of the river-sediment-soil-groundwater system at various temporal and spatial scales
- to relate expected climate alterations to changes in deposition, mobility and distribution of pollutants in European river basins.
- to provide the scientific basis for improved river basin management
- to introduce novel tools for water and soil quality monitoring
- to show the necessity of integrated modelling frameworks for impact evaluation of pollution as well as climate and land-use changes for definition of long-term management schemes

The work illustrates the dynamic behavior of the pathway of pollutants in soils, groundwater, surface water and sediments. It highlights the fundamental importance of integrating knowledge from several combined disciplines on various environmental compartments in order to understand the large number of processes that govern pollutant input, transport and turnover. Results show that a significant step forward has been made in the development of new analytical methods and of process-based numerical models that are capable of making predictions of likely trends and environmental changes to be expected in the near or distant future at the basin-scale. These models can be used e.g. to generate hydrologic scenarios based on climate models and to simulate pollutant distribution and turnover rates from decades to millennia.

Contents

HYDRO; Climate and water cycle at the basin scale, BGC; Biogeochemical Processes in Soils and Sediments, FLUX; Mass transfer in River-Sediment-Soil-Groundwater systems, MONITOR; Data analysis. monitoring and analytical protocols, sampling devices, TREND; Temporal development of environmental media: properties, processes and stresses, BASIN; Integration of research in AquaTerra river basins, COMPUTE; Modelling methods and strategies, INTEGRATOR; Integration of knowledge, EUPOL; Linking policy demands and research

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