

# Measuring and modelling of fluvial topography

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## Abstract:

The triangle “measuring - modelling - risk assessment” is discussed focusing on the role of geomatics. An overview of available sensors for capturing fluvial topography (satellite imagery, photogrammetry, airborne, terrestrial and mobile laser scanning, echo sounding) is presented. Special emphasis is laid on a new laser bathymetry sensor enabling to capture, both, the flood plain and the water body in a single flight campaign with high resolution ( $\sim 50$  points/m<sup>2</sup>) and height accuracy (<10cm).

The second part of the presentation deals with the derivation of topographic models (DSM, DTM, break lines) and relevant land cover types (vegetation, buildings) using data of the aforementioned sensors. These topographic models and roughness indicators are the basis and the most important input for subsequent hydrodynamic-numeric modelling resulting in end-user products like inundation maps, hazard maps or the like. The presentation concludes with considerations about the added value of the increasing availability of high resolution data for the quality and reliability of the identification of threatened areas.