



Measuring surface flow velocity with smartphones: potential for citizen observatories

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Stream flow velocity is an important variable for discharge estimation and research on sediment dynamics. Given the influence of the latter on rating curves (stage-discharge relations), and the relative scarcity of direct streamflow measurements, surface velocity measurements can offer important information for, e.g., flood warning, hydropower, and hydrological science and engineering in general.

With the growing amount of sensing and computing power in the hands of more outdoorsy individuals, and the advances in image processing techniques, there is now a tremendous potential to obtain hydrologically relevant data from motivated citizens. This is the main focus of the interdisciplinary “WeSenseIt” project, a citizen observatory of water.

In this subproject, we investigate the feasibility of stream flow surface velocity measurements from movie clips taken by (smartphone-) cameras. First results from movie-clip derived velocity information will be shown and compared to reference measurements.