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DischargeApp: A smart-phone App for measuring river discharge

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Smart-phones nowadays include diverse sensors like GPS, gyroscope, accelerometers, cameras etc., and have become very powerful. Making use of such advances, we have developed a mobile application for open-channel flow measurements. The App computes the surface water velocity by analyzing a few seconds of a movie that is recorded by the smart-phone camera, the method used does not require any artificial tracers. The discharge is then calculated from the estimated water level, surface velocity and from prior knowledge on the channel geometry. Setting up a site only requires four markers located at the shore and the cross section of the river or channel. Once a site is set up, consecutive measurements only take a couple of minutes to be done. The measured data and the proof image can easily be transmitted to the cloud via GSM, SMS or WiFi.
In this session we will demonstrate the use of the App by playing a movie of a river on a screen. This flow is going to be treated as a channel and measured with the smart-phone. Everyone attending the session is invited to download the App and do their own measurements.