

# **UAVs in hydrology: opportunities (and some challenges) from a novices perspective**

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**Abstract:** Drones, or more commonly unmanned aerial vehicles (UAVs), have ushered in a new era in Earth observation, the implications and opportunities of which are rapidly being realised. Recent technological leaps in UAVs and miniaturized sensors provide a capacity to autonomously collect information at unprecedented spatial resolution on demand. Once the domain of military and related agencies, the availability of commercial and affordable enthusiast level systems has driven a revolution in the field of remote sensing across areas as diverse as 3D mapping, search and rescue, spatial ecology and in our own field of hydrology. However, from a user-perspective, there is a considerable gap between being able to deploy these systems and then being able to make use of the data they collect. Here we will discuss a number of opportunities in the application of UAVs for advancing our understanding of the surface processes, with a focus on some of our recent activities in agricultural remote sensing and plant-water interactions.

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