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Use of UAVs for intertidal sediment type mapping

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Mapping of intertidal sediment using in-situ sampling is time-consuming and has health and safety complications, especially for higher tidal range regions. Remote sensing is attractive to overcome these difficulties. Previous investigators utilised hyperspectral sensors on aircraft and satellites to map intertidal sediment type; however, cost and spatial resolution mean additional tools are desirable. One option is the exploitation of UAVs carrying a range of sensors.
In this study a small fixed wing UAV is flown with RGB cameras, thermal cameras and multispectral cameras at various locations in a mega-tidal environment (Swansea Bay, UK). Sediment is characterised over the flight areas by in-situ surface moisture content measurements, temperature and grain size distribution. This presentation will describe the variation of remotely sensed parameters over the intertidal region and their relation to sediment type and moisture content. Discussion of the potential to utilise this variation to identify different sediment types will be made.