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Department of Marine Sciences
Presents a Seminar by

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DIY Drones: Using unmanned aerial and surface vehicles for nearshore oceanography

The growth of the unmanned aerial vehicle market in the past decade has resulted in low-cost reliable navigation controllers (e.g. the ArduPilot system) that can operate many different type of unmanned vehicles. At WHOI we have developed several unmanned surface vessels (USVs) for use in nearshore survey applications based on Ardupilot controllers. The first of these vehicle was the Jetyak which is based on a commercially available motorized jet drive kayak. This USV has been used in variety of applications ranging from tidal inlet morphology to glacier - sea water interactions. The inlet morphology research has also taken advantage of the capabilities of unmanned aerial vehicles to map both beach topography and bathymetry in areas with clear water using a refraction correction to the well-established structure from motion photogrammetry techniques. More recently we have developed USVs for surf zone survey to map nearshore bathymetric change in response to coastal storms. These designs started with commercially available hobby grade remote control boat hulls paired with the Ardupilot controller system and we now developing customized hulls for the surf zone environment and the sensor packages of interest such as multibeam sonars. In addition to vehicle descriptions results from some recent nearshore surveys will be shown in the lecture.

Host: Frank Bohlen

Time & Date: 11:00 am, Friday, April 16, 2021

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