# Wide-area remote sensing of hydrodynamic signals with micro-AUVs

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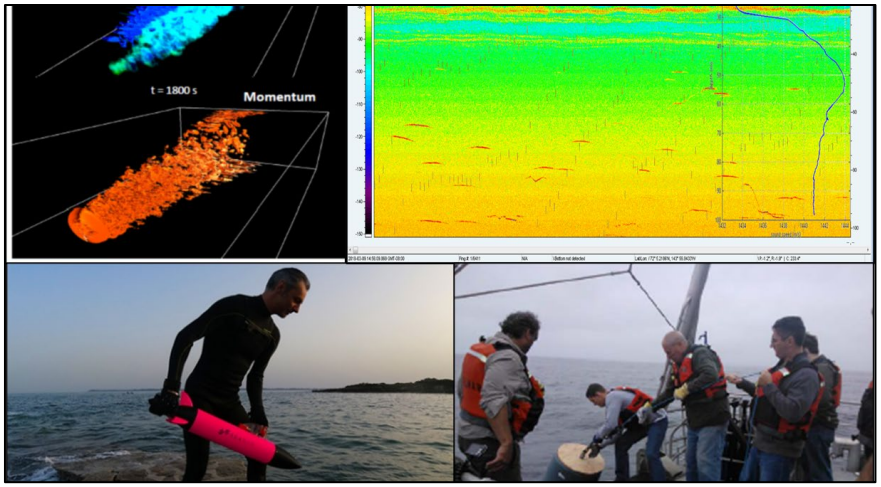
Consortium for Robotics and Unmanned Systems Education and Research




## Problem Statement

- Use vertically oriented echosounder sensors on micro-AUV to remotely sense hydrodynamic signals in stratified ocean environments to provide wide-area surveillance coverage
- A combined approach:
  - Theory: understand the physics behind wakes properties and acoustic sensing
  - Modeling: run numerical simulations of wakes and their measurable acoustic properties
  - Field tests: how well do the theory and modeling results translate to real ocean environments?

## Impact

- Alternative to traditional USW detection approach
- Rapidly deployed anywhere, anytime
- Autonomous, wide-area surveillance
- Operational system will evolve into an EMATT-like expendable system requiring no support tail at sea

## Transition

- New tool in the toolbox for USW operators, can be used by air, surface and submarine
- Potential support from ONR USW
- Potential to test with UWDC
- Not starting from scratch - similar in concept to Navy EMATT may reduce development costs



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