

Gliders in the central Labrador Sea: Challenges and Opportunities

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ABSTRACT: The central Labrador Sea is a challenging environment in which to obtain oceanographic measurements in wintertime due to its remoteness and extreme weather conditions. Underwater gliders are well-suited for these challenges given their ability to be actively piloted and deployed for many months at a time. As part of a multi-institutional Canadian project studying deep convection in the Labrador Sea, Memorial will be operating gliders in the deep waters off the Labrador shelf. Here I outline plans for the first of these deployments, which will see one of our deep gliders over-winter on a seven month monitoring mission. In addition to collecting hydrographic and oxygen data, this vehicle will also measure unionised CO₂; the first such attempt with a Slocum glider. This ambitious sampling plan presents several glider piloting challenges including navigation across the fast-flowing Labrador current and use of novel thruster-assisted flight behaviours. I will discuss our efforts to meet these challenges, presenting results from a glider flight model and a recent field test in Trinity Bay.

ALL ARE WELCOME!!!