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## The Summer Warming of the MAB Cold Pool from an Ocean Glider Perspective

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### Abstract (Oral Presentation)

A comprehensive set of 2007 single-glider missions was used to articulate the Cold Pool summer warming. Here we also highlight the issue of inter-annual variability by comparing the September 2007 Cold Pool with the 2013 measurements of a dramatically warmer ( $\sim 2^{\circ}\text{C}$ ) coastal ocean; as demonstrated by comparing the section-minimum temperatures  $T_{\min}$ . During the autumn of 2013 the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) - under the auspices of the NOAA Integrated Ocean Observing System (IOOS) – coordinated the shelf deployments of 9 ocean gliders between Nova Scotia and Georgia in an exercise called GliderPalooza 2013. A trio of those gliders each sliced through the Cold Pool at least twice during their month-long missions. The 2007 and 2013 Cold Pool core  $T_{\min}$  and associated salinity  $S_{\min}$  were used to define a Cold Pool T-S domain. A simple Cold Pool Slice model, which was applied to the 2013 trio of glider measurements, reveals the differing Shelf Break Front (SBF) dynamics governing the warming dynamics of different sectors of the Cold Pool. Glider measurements show that significant inter-annual variability of the MAB Cold Pool is related to impingement of Gulf Stream warm core rings. Model estimates from glider measurements show the importance and long-shelf diversity of the interplay of Shelf Break Frontal exchange and long-shelf convergence/divergence processes