



The ESASSI-08 cruise in the South Scotia Ridge region: preliminary analysis of hydrodynamic and biogeochemical data

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The ESASSI-08 oceanographic cruise carried out in January 2008 was the major milestone of ESASSI, the Spanish component of SASSI (a core project of the International Polar Year devoted to study the shelf-slope exchanges in different locations of Antarctica). The sampling strategy of the cruise consisted of 11 full-depth CTD/ADCP sections across the northern and southern slope of the South Scotia Ridge (SSR), between Elephant and Orkney Islands. The sections extend from shelf waters to open sea and the profiles were gathered at an unprecedented spatial resolution over the slope (about 2 nm). Water samples for chemical and biological analysis were also collected at each station; the analyzed parameters include trace gases (CFCs), oxygen isotopes, carbon-related parameters, and nutrients.

In this presentation we show the overall distribution of the main variables across the different sections. Namely, we present: a water mass analysis (in terms of potential temperature, salinity and neutral density), estimates of velocities and fluxes across different transects and distributions of biogeochemical parameters. The ultimate aims of the ESASSI project are: 1) to elucidate the fate of the ASF when it enters the SSR from the Weddell Sea; 2) to estimate the shelf-slope exchanges for different parameters; and 3) to quantify the importance of the ventilation associated with intermediate waters flowing over the SSR with respect to the ventilation associated with bottom waters that are blocked by the SSR and flow around the Orkney Plateau.