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ORCA (Antarctic Cosmic Ray Observatory): 2018 latitudinal survey, preliminary results

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A new cosmic ray instrument, the Antarctic Cosmic Ray Observatory (ORCA), has performed a latitudinal observation from Vigo (Spain) to Juan Carlos I Spanish Antarctic Base (Livingston Island, Antarctic Peninsula) aboard the Sarmiento de Gamboa oceanographic vessel from November 14th to January 2nd. The latitudinal survey took ORCA throughout the South Atlantic magnetic anomaly along the Brazilian coast.

ORCA is integrated by a set of detectors able to measure fluxes of neutrons, charged particles (mostly muons) and muons incident directions on the detector surface. The combination of these detectors allow us to measure neutrons, muons, protons, electrons and gamma rays arriving to ORCA's location.

Here we present the preliminary results of the latitudinal survey and our initial conclusions.