Natalia
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Poster
In February, 2013, the joint French/Indian altimeter mission SARAL was launched. The main payload of this mission is AltiKa, a pulse-limited altimeter which breaks away from previous altimeter design in that: its center frequency is in the Ka-band (35.75GHz), it has a transmit/receive bandwidth of 500 MHz, and a higher spatial sampling frequency of 40 Hz. These pertinent differences are hoped to improve knowledge of the small (mesoscale) ocean processes. Back in April, 2010, ESA had also launched a unique altimeter mission CryoSat-2 which also has some different characteristics to current and past altimeter missions. The main payload of CryoSat-2 is SIRAL - a Synthetic Aperture Interferometric Radar Altimeter, which breaks away from conventional altimeter missions in that it exploits coherence between its transmitted pulses to effectively increase the illumination time for any given object within its antenna, leading to increased spatial resolution in the along-track direction.

Both CryoSat and SARAL furnish new ways of measuring the Earth's surfaces, and may be expected to surpass conventional pulse-limited Ku-band altimetry. Their backward-compatibility with legacy measurements is also a concern for the study of climatological time series of ocean dynamics, sea level, and ice sheet elevation. We aim to assess the performance of CryoSat and SARAL in these areas. In particular, we are looking at ocean surface height, SWH and backscatter, and the comparison of AltiKa and SIRAL data to legacy EnviSat data over the Antarctic ice sheet.
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