



Investigating the lithospheric structure of Queen Maud Land, East-Antarctica: a year-round seismic experiment

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The recently launched LISSA project is dedicated to imaging the lithospheric structure of East-Antarctica in relation with the past geodynamics of Gondwana by probing the Sør Rondane Mountains, Queen Maud Land, a belt formed from various metamorphosed terranes mobilized during the Proterozoic Pan-African orogeny. The project benefits from the establishment in 2009 of the Belgian Princess Elisabeth base built at the northern tip of the mountain chain. Our aim is to investigate the deep lithospheric structure of the region by setting up in January 2014 6 broadband seismic stations along a 100 km long North-South profile through the mountain belt striking perpendicular to the various geological terranes. All stations are set up to be year-round autonomously powered, all but one being on rock outcrops and only one being remotely accessible. We describe the technical development for year-round operation and the installation site conditions. Then we present the first collected data by analyzing the background seismic noise providing data quality and finally we provide a first inventory of a 1 month event dataset.