



Preliminary performance report of the RHUM-RUM OBS network

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RHUM-RUM is a German-French seismological experiment based on the seafloor surrounding the hotspot of La Réunion, western Indian Ocean. Its primary objective is to clarify the presence or absence of a mantle plume beneath the Reunion hotspot.

RHUM-RUM's central component is a one-year deployment (Oct 2012 – Nov 2013) of 57 broadband ocean-bottom seismometers (OBS) and hydrophones on an area of 2000x2000 km² surrounding the hotspot. The OBS pool contained 48 instruments from the German DEPAS pool and 9 French stations from INSU. All OBS have been successfully recovered.

Preliminary analysis of the seismometer recordings show large differences in long-period (>10s) noise levels between the German and the French OBS. These differences are strongest on the horizontal components and can be probably explained by dynamic tilt of the instrument itself. The noise level of the German instruments is >20dB higher in this period range compared to the French ones. A reason could be that for the German OBS, the seismometer is integrated into the OBS frame and therefore affected by its movement due to currents.

The high noise level on the horizontal components will have to be considered in future experiment design, when using this instrument type for three-component waveform tomography.