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## ICEQUAKE OBSERVATIONS AT TROLL, ANTARCTICA

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Johannes SCHWEITZER<sup>1</sup>

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Seismic stations in polar environments often record thousands of glacial events (icequakes) per day. Usually, these often quite small events are seen as noise disturbing ‘normal’ seismic signals. These events are mostly caused by movements in nearby glaciers. However, since the dynamic behavior of glaciers, in particular in the Polar Regions, has during the last years come more into scientific focus, it became also of seismological interest to analyze icequakes.

In this talk, results from the analysis of about 2 1/2 years recordings at the seismic station TROLL in Dronning Maud Land, Antarctica are presented. Many icequakes occur near the surface of the ice sheet and therefore their seismic signals often show strong Rg phases. For this study, a detector and analysis algorithm focusing on the automatic detection of Rg phases was employed. So, single source regions of Rg-phase radiation by icequakes could be identified. In addition, for selected icequakes, a cross-correlation detector was used to investigate the activity of specific source regions.

From this analysis it became clear that the occurrence rate of icequakes for the different source regions changes over time. There exist days with thousands of events and others with almost no activity. In this talk, the correlation of icequake occurrence rate with changes in weather parameters (like temperature, air pressure and wind vector), sun light and seasons of the year will be discussed.

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<sup>1</sup> Dr., NOR SAR, Kjeller, Norway, johannes.schweitzer@norsar.no