

## **EARTHQUAKE OBSERVED AT THE MAGNETIC OBSERVATORY AT BRORFELDE, DENMARK**

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On December 16<sup>th</sup>, 2008 an earthquake of magnitude 4.2 MW occurred in Southern Sweden – a rare occurrence in this geographical region. The tremor of the ground was large enough that magnetometers at the Brorfelde observatory about 140 km away from the epicentre registered the event. Even at DMI's variometer station on Rømø at a distance of 340 km, the earthquake influenced the magnetic measurements. The earthquake is clearly visible in the 1 Hz data from both the observatory and the variometer station, whereas nothing is seen in the minute means, which is generated as average values of the second data. The earthquake has given us an opportunity to investigate how the DMI FGE pendulum fluxgate magnetometer reacts to high-frequent vibrations of the base. At the Brorfelde observatory where two identical magnetometers are placed next to each other we see very different amplitudes of the signal: the amplitude of the earthquake signal on the east component of the primary instrument is about twice the amplitude of the same component on the secondary instrument for most of the earthquake signal. Looking for additional examples of magnetometer registrations of earthquakes we discovered amongst others signals from an earthquake in the Disko bay on March 30<sup>th</sup>, 2005 on data from the Godhavn (Qeqertarsuaq) Observatory in Greenland.

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