



## **Seismic waveform inversion and imaging of deepwater glacial sedimentary fans in the northern Norwegian-Greenland Sea**

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In this poster we show results from 2D acoustic pre-stack depth migration and full waveform inversion using multichannel seismic data, complemented by coincident travel-time tomography of wide-angle ocean bottom seismometer data. The study area is located within the deep ocean basin in the northeastern parts of the Norwegian-Greenland Sea. This area was affected by intense Quaternary glacial sedimentation in the Storfjorden and Bjørnøya Fans and formation of submarine mega-slides. The seismic source used for the data acquisition consisted of an array of six airguns, and the wavefield was recorded by a 3-km-long 240-channel streamer. After some initial processing, pre-stack depth migration and waveform inversion was performed in order to obtain an image the glacial sedimentary package. The background velocity model was obtained from travel time tomography on the coincident ocean bottom seismometer data.

We first show inversion results for a test model which is based on the our knowledge of the geology of the area. We then show the inversion results on the real data. One of the main differences between the test inversion and the real data inversion is the inknown source wavelet in the latter case. We show how the source wavelet affects the inversion results and how to properly take the source wavelet into account.