Geophysical Research Abstracts
Vol. 13, EGU2011-3892, 2011
EGU General Assembly 2011

Long-Term Seismological Observations of Eruptions of the Håkon Mosby Mud Volcano at the Barents-Sea Continental Margin (ESONET- LOOME Demonstration Mission)

Jurgen Mienert, Stefan Bünz, Benedicte Ferre, Gaurav Dutta, and Vipul Silwal
University of Tromsø, Institute of Geology, Tromsø, Norway (jurgen.mienert@uit.no)

As part of the ESONET- LOOME Demonstration mission, an ocean-bottom seismometer (OBS) was deployed at the Håkon Mosby Mud Volcano (HMMV) at the Barents-Sea continental margin. This first-year deployment lasted from October 21, 2008 - July 27, 2009. The OBS was equipped with a 3-component seismometer detached from the OBS frame. The aim of the OBS deployment was to detect mud and fluid eruptions, and its precursory phenomena, like fluid release and/or mud movement at depth. SAC (Seismic Analysis Code) has been used for analysis of this OBS data. SAC is a general purpose interactive program designed for the study of sequential signals, especially time-series data. The analysis capabilities of SAC include general arithmetic operations, Fourier transforms, three spectral estimation techniques, IIR and FIR filtering, signal stacking, decimation, interpolation, correlation, and seismic phase picking. SAC also contains an extensive graphics capability. In addition, earthquake events in the northern Norwegian Greenland Sea around the mud volcano are a focus because of its possibility to trigger fluid release events at depth. More than 4000 earthquake have been registered in the greater region (65N – 85N, 30W – 40E). Earthquake data come from ISC (International Seismological Centre, UK) and IRIS (Incorporated Research Institutions for Seismology) database. A catalogue of all major events in the region from 65N - 85N and longitudes 30W – 40E was prepared. Earthquake data from ISC (International Seismological Centre, UK) were included in the extensive catalogue. From this catalogue, 6 major earthquakes were selected for a more detailed analysis at the HMMV signature of OBS recordings, the criteria being the magnitude and frequency content of it. We shall test the hypothesis that earthquakes trigger fluid flows events at the HMMV.