

## **Tertiary volcanism in the NW Atlantic area: update on the repartition and age**

Mansour M Abdelmalak (1), Sverre Planke (1,2), Stephane Polteau (2), and Reidun Myklebust (3)

(1) University of Oslo, CEED: Centre for Earth Evolution and Dynamics, Oslo, Norway (m.m.abdelmalak@geo.uio.no), (2) Volcanic Basin Petroleum Research (VBPR), Oslo Science Park, Oslo, (3) TGS, Lensmannsliia 4, 1386 Asker, Norway

The Paleogene igneous rocks in the NW Atlantic were emplaced during a number of tectonomagmatic events closely associated with lithospheric stretching, continental break-up and formation of ocean basins. Onshore, the igneous rocks outcrop in west-central Greenland and in Cape Dyer on the Canadian side. Offshore, seismic volcanostratigraphic interpretation of 2D seismic data in the northern Labrador Sea, Davis Strait and southern Baffin Bay reveal the presence of extensive Paleogene volcanic rocks. Eastward prograding cross-bedded hyaloclastite outcrop in Nuussuaq analogue to the Lava Delta facies unit. This facies unit is overlain by a kilometer-thick horizontal lava pile analogue to the Landward Flows facies unit. Several Seaward Dipping Reflector wedges and escarpments are identified in the northern part of the Labrador Sea. Volcanism occurred also in the Baffin Bay area west of the Kivoq Basin. We have dredged and dated volcanic rocks which give an early Eocene age. The onshore volcanic pile was formed between 62.5 and 53 Ma. A quiescent period between 56 and 58 Ma correlates with a similar quiet period in East Greenland and the Faroes. During this period, leading up to the Paleocene–Eocene transition at ~56 Ma, a significant change in the mantle sources as well as the spreading direction took place. Our results indicates that the Eocene volcanism in the NW Atlantic area could be more voluminous and important than what was though before. This volcanism is contemporaneous with the opening of the NE Atlantic ocean and the Paleocene Eocene Thermal Maximum (PETM) global warming and extinction event.