

# Estimating net erosion from P-wave velocity variations and seismic sections

M.Sc. Student Richard Elks

Norwegian University of Science and Technology, Norway.  
CASE annual meeting 8<sup>th</sup>-9<sup>th</sup> May, Bergen, 2016.

## Abstract

Several major uplift and erosion events are known to have occurred in the Barents Sea. Regional super-tie seismic sections, along with 11 wells from the western Barents Sea, have been selected to estimate net erosion.

The seismic sections will be interpreted using Petrel in order to make estimates on the magnitude of net erosion.

P-wave velocities from the well logs will be analysed in order to investigate velocity-depth trends. As rocks get buried deeper below the surface, mechanical and chemical compaction processes take place, resulting in an increase in acoustic velocity properties. These rocks, if uplifted and the overlying sediments eroded, hold their memory of their maximum burial acoustic velocity properties.

The uplift estimate results from the well logs will be analysed in conjunction with relevant seismic sections that cross the well paths. Both the well log results and seismic sections will be tied together in an attempt to explain the observed geology. An attempt will also be made to explain discrepancies, if they exist, between the two methods. Additionally, suggestions will be made as to which uplift mechanism(s) is responsible for each uplifted area.

From published data, a general trend of increased uplift towards the north eastern part of the study area is seen to exist. The results from this study will be compared to the published data.