

Late Mesozoic-Cenozoic evolution of Western Barents Sea

The Barents shelf covers two major geological provinces, separated by a north–south trending, generally monoclinical structure. The western province is a network of basins and platforms produced by a complex structural and stratigraphic evolution (Gabrielsen et al., 1990; Worsley, 2008) related to the North Atlantic rifting. This region has demonstrated potentials of hydrocarbon reserves with also recent promising oil and gas discoveries. Regional seismic studies and well data, have been performed during the last 30 years, but the exploration in this area is still ongoing as one of the last underexplored frontiers on the Norwegian continental shelf.

Within this context, the aim of the project is to study the evolution of the SW Barents epicontinental shelf and margin, and the main tectonic events related to the North Atlantic rifting. Particular attention should be paid in the distinction between new-generated structures and structures inherited from the Permo-Carboniferous rifting. The location and development of sedimentary bodies (shoreface ridges, deltas, fluvial channels, etc.) will be considered in relation to the location and activity of the observed structural elements. Different sectors of the SW Barents Sea will be investigated, in order to verify the timing and evolution of the rifting in different structural positions within the passive margin. For this purpose, outer platform's basins and ridges characterized by different subsidence pattern, fault configuration and possible spatial and temporal heat flow variations will be analyzed possibly along a proximal to distal transect.

The present project will be achieved through the study of 2D and 3D seismic data made available by TGS-Nopec (partner of the project) and public well data for exploration drilling. The integration in the regional geological and structural framework will take advantage of the experience of prof. J.I. Faleide from the University of Oslo.

Financial support and data availability. The project will be funded by ex-60% from University of Padova and contributes from the University of Oslo. Seismic Data will be provided by TGS-Nopec Geophysical Company ASA.

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