



On- Offshore correlation around the New Siberian Islands, Laptev and East Siberian Seas, Russian Arctic

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The Laptev and East Siberian Seas cover large areas of the continental margin of North-Eastern Siberia and are separated by the New Siberian Islands. The East Siberian Shelf covering an area of 935.000 km² is a virtually unexplored area and most geological models for this shelf are extrapolations of the geology of the New Siberian Islands, the Wrangel Island and the northeast Siberia landmass. Apart from few seismic reflection lines airborne magnetic data were the primary means of deciphering the structural pattern of the East Siberian Shelf. The Laptev Shelf covers an area of about 660.00 km² and occupies a shelf region, where the active mid-oceanic spreading ridge of the Eurasia Basin meets the slope of a continental margin.

Since no deep wells have been drilled so far on the shelves surrounding the New Siberian Islands, the precise age and nature of the seismic horizons which have been defined remain uncertain. All interpretations base on different evolution scenarios for the shelf areas resulting in a wide variety of interpretations available for the sedimentary cover of the Laptev Shelf where the interpretations range from Proterozoic to Cenozoic.

Here we present correlations from onshore to offshore geology based on multichannel reflection seismic data acquired by BGR in the 1990th and a joint VSEGEI/BGR expedition to the New Siberian Islands in 2011. Key marker horizons in the offshore data are linked to major hiatuses in the onshore region. Well information is available close by the Lena delta in the form of sketched stratigraphy ranging from Proterozoic to Cretaceous. Both informations can be reconciled on a cross section despite a gap of approximately 25km, providing a tentative age for a regional unconformity sitting on top of an acoustic basement.

We additionally reinterpret the stratigraphy based on rift stages at the conjugate North Greenland margin. Thus we suggest the presence of a break-up unconformity in the seismic data.