

Opening of the Porcupine Basin offshore western Ireland: numerical and analogue models

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The Porcupine Basin is a narrow V-shaped abandoned rift located offshore Western Ireland. New seismic refraction models image the crustal structures through the basin, and the probable presence of oceanic crust in the central part of the southern basin. Interpretation of seismic reflection data near the northern end of the rift (1) allows the definition of morpho-tectonic structures with higher resolution and (2) highlights the propagation of the rift toward the north. These observations give a better understanding of the history of the rifting and the role of the far-field forces that led to its formation.

The aim of this study is to understand the factors controlling the propagation of the rifting, and we will investigate how a continental rift starts, propagates and even forms some oceanic crust before finally failing. Thus, we will compare the available geological and geophysical observations with preliminary results of analogue and 3D numerical simulations of the rift propagation.