

Ideas and thoughts on the formation and reactivation of small oceanic domains and hyperextended rift basins

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The architecture of distal rifted margins and adjacent small oceanic basins are not well constrained. Modern geo-physical dataset today allow high resolution imaging and detailed mapping and modelling. However, very few basement samples are available to accurately anchor our interpretations. Result being that various interpretations and models are proposed in the literature, and no consensus has been reached on the formation and composition of these specific domains. So, although distal rifted margins mark the connection between continents and oceans, and thus correspond to unique stages in the Earth's lithospheric life cycle, their spatial and temporal evolution are still unresolved. For this invited contribution, I will try to make the point on where we are with the fundamental questions of the formation and reactivation of these particular domains. First in a general context. Then, I will use the Norwegian-Greenland Sea rift system as example laboratory to illustrate the listed ideas and thoughts.