

## Morphology and structural segmentation of the Knipovich Ridge: Implications for magmatism of the ultra-slow spreading center

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The Knipovich Ridge, the Arctic Ocean, is one of the ultra-slow spreading ridges (spreading rate is 1.5cm/yr). The analysis of the bathymetry and the deep-tow sonar imagery along the ridge axis reveal the segmentation of the ultra-slow spreading system. The rift wall of the Knipovich Ridge is oblique to the spreading direction predicted by the global plate motion model however the faults and volcanic bodies within the axial rift show en-echelon structure and match the spreading direction. Four topographic highs that are accompanied with hummocky terrains are located every 90-120 km in the rift, which are considered as the centers of segments. Smaller order segmentation is also recognized by detailed analysis of the sonar imagery.