



## **Modeling the formation and evolution of linear fractured zones and linear kinematic features in sea ice**

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Linear fracture zones (LFZs) here refer to the long, narrow geophysical features in sea ice that are morphologically different from the surrounding ice. They may consist of open water, new ice, young ice, rafted ice, or even ridged ice. Linear kinematic features (LKFs), which are closely related to LFZs, refer to the long, narrow geophysical features in the ice deformation field. In this study, a new sea ice dynamic model is developed to investigate the formation and evolution of the LFZs and LKFs. The numerical experiments show such features can be successfully captured.