Viscous plastic sea ice models at very high resolution
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The Arctic sea ice cover is crisscrossed by leads and pressure ridges, often referred to as linear kinematic features (LKFs). Leads are stripes of open ocean in the sea ice. As such they play a crucial role in the Arctic climate system because they accommodate half of the Arctic heat loss and thus enable sea ice formation. Hence a proper representation of LKFs in a climate model is expected to improve its overall performance.

So called viscous-plastic sea ice models are used in most climate systems and are thought to represent the sea ice on a large scale well. Here I will show leads emerging in a viscous-plastic sea ice model depending on increased spatial resolution. The modeled sea ice deformation is compared to observational data by a statistical analysis and using the fractal characteristics of sea ice deformation.