



## **Towards a new generation sea ice model**

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A new sea ice model is being developed in view of reproducing sea ice dynamics at all spatial and temporal scales. This model uses a new elasto-brittle rheology. We will present preliminary results showing the capability of this model at simulating various types of dynamical behavior, whether it is in the central Arctic, in marginal seas, or near the ice edge. This model reproduces the statistical properties of the sea ice drift and deformation as shown by satellite observations, and naturally exhibits the large scale anisotropy of the deformation field. Based on the results of a high-resolution simulation, we will show the impacts of the simulated sea ice dynamics on the concentration and thickness fields for a period of several weeks over the Arctic basin. More specifically, we will focus on the high frequency opening and closing of leads, which will be likely to have large impacts on brines rejections and the upper Arctic Ocean mixing once our model will be coupled to an ocean model.