Well-posedness of Hibler's dynamical sea-ice model

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We establish the local-in-time well-posedness of solutions to an approximating system constrcuted by mildly regularizing the dynamical sea ice model of W.D. Hibler in 1979, which is widely used in the prediction of evolution of Artic sea ice. Our choice of regularization has been carefully designed, prompted by physical considerations, to retain the original coupled hyperbolic-parabolic character of Hibler's model. The well-posedness theory of such a system provides a first-step groundwork in both numerical study and future analytical study. This is joint work with Marita Thomas and Edriss Titi.