Evolution of the Arctic Ocean sea ice cover: Nov 1996-April 1997

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High-resolution radar imagery of the Arctic Ocean is being acquired on a routine basis. These sequential radar observations, collected by RADARSAT, are transformed into estimates of ice motion, deformation, age and thickness by the RADARSAT Geophysical Processor System. The RGPS data products provide basin-scale view s of the evolution of the sea ice cover over an entire winter. At a given time, the data products allow the visualization of all the kinematically active linear features over the Arctic Ocean. Nearly all deformation on the ice cover is localized along these features while the rest of the ice cover remains unaffected. We use the phrase *Linear Kinematic Features* (LKFs) as a descriptor of these long, narrow features, whether or not they contain open water, new ice, nilas, young-ice, first-year ice, rafted ice, or ridged ice. They can be created by divergence, convergence, shear, or combinations of these processes. The amount of open water production, ridging and the thin ice thickness distribution can be estimated at these linear features. Here, we show the temporal development of these LKFs over the period between November 1996 and April 1997. The ice volume created at the openings and the volume that participated in closings since over the season is estimated.

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