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Ice floe dispersion from moderate remote sensing imagery[1] ROSALINDA LOPEZ, University of California Riverside, MONICA M. WILHELMUS, Department of Mechanical Engineering, University of California Riverside, WILHELMUS LAB TEAM — Sea ice transport directly affects the heat budget and freshwater flux in the Arctic. To understand the Arctic climate system, it is thus important to quantify the dispersion regime of free-drifting sea ice. In this study, we employed an in-house algorithm to automatically process Moderate Resolution Imaging Spectroradiometer satellite images and track ice floes (8 to 65 km) along the eastern coast of Greenland during the spring of 2017. By quantifying the drift fields, the dispersion regime of the ice floes was analyzed to understand the drivers of sea ice transport. Preliminary results show that, as expected, in the presence of a strong shear flow as the East Greenland Current, the absolute dispersion of ice floes grows quadratically in time. Further analysis of the fluctuating component of sea ice velocities also yields an absolute dispersion that grows quadratically in time at short time scales (few days). It was observed, however, that this behavior changes when considering longer time scales as the influence of the underlying eddy field becomes more prominent. We examine the effect of small scale oceanic turbulence on sea ice drift and discuss the feasibility of extending our study to improve our understanding of sea-ice ocean interactions.

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