1116-86-1269 **J V Lukovich*** (jennifer.lukovich@umanitoba.ca), 125 Dysart Road, Winnipeg, MB R3T 2N2, and **J K Hutchings** (jhutchings@coas.oregonstate.edu), **K M Golden** (golden@math.utah.edu), **N B Murphy** (nbmurphy@math.uci.edu), **H Dinh** (hdinh2707@gmail.com) and **E Fang**. *Sea ice dispersion and anomalous diffusion: patterns and paradigms.*

Accelerated change in sea ice dynamics in the Arctic and an underestimation of this change in IPCC models emphasizes the importance of understanding transitions in the dynamical characteristics of the ice drift field. Central to this understanding is the identification of flow topology and distinct dynamical regimes, which provide alternative characterizations to sea ice concentration, extent, and age. Lagrangian dispersion statistics and, in particular, temporal scaling laws provide diagnostic tools for the identification of dynamical regimes and the dispersive nature of these regimes, which provides insight into the stirring and mixing characteristics of the ice drift field.

We use the mean squared displacement of individual sea ice floes, which scales as time raised to an exponent, to establish a correspondence between flow topology and the scaling exponent, which characterizes distinct dynamical regimes and anomalous diffusive flow patterns. We will also examine temporal scaling maps and anomalous diffusion as a way of characterizing compressible and incompressible flow regimes of sea ice dispersion, for different ice types and zones with varying sea ice compactness and strengths. (Received September 18, 2015)