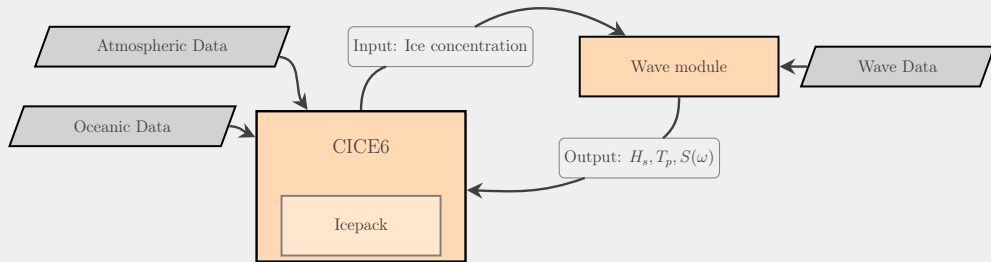
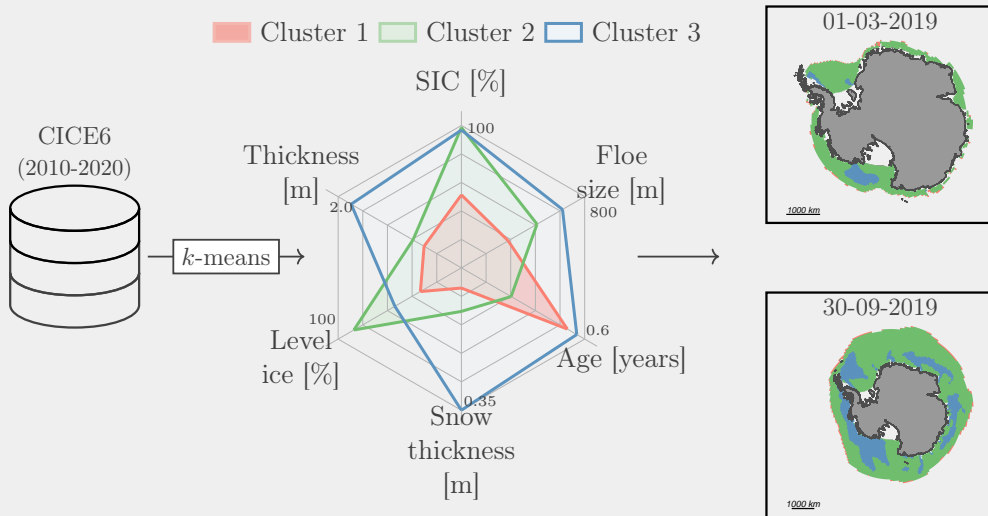


SUPPLEMENTARY MATERIAL - MODEL CONFIGURATION

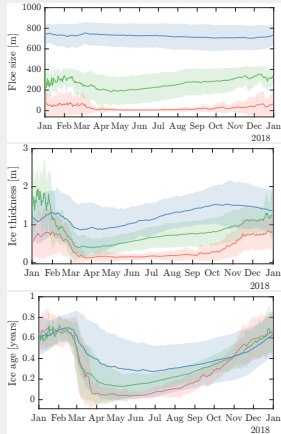


Configuration of CICE6 with an hourly coupled wave propagation module. Waves from a WaveWatch III hindcast are propagated from the open ocean into the ice along longitudinal lines and exponentially attenuated using the sea ice concentration (Meylan, et al., GRL, 2014).

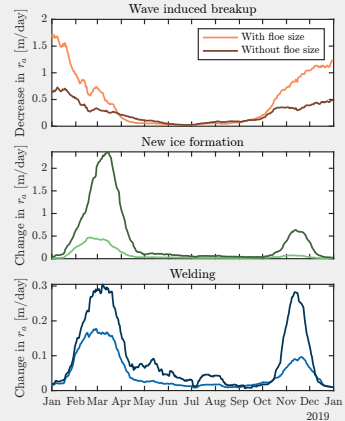
SUPPLEMENTARY MATERIAL - ICE CLUSTERS WITHOUT FLOE SIZE



SUPPLEMENTARY MATERIAL - CHANGES IN EACH CLUSTER



Seasonality of floe size (top), ice thickness (middle) and ice age (bottom) in each of the three clusters (with floe size): marginal ice zone (red), thin ice (green), thick ice (blue).



Change in the mean floe size (radius) in the unsupervised MIZ with and without floe size (light and dark colours respectively).