Supporting Information for "Edge displacement scores"

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Introduction The supporting information includes two supplementary figures and one supplementary table that are discussed but not displayed in the main article.

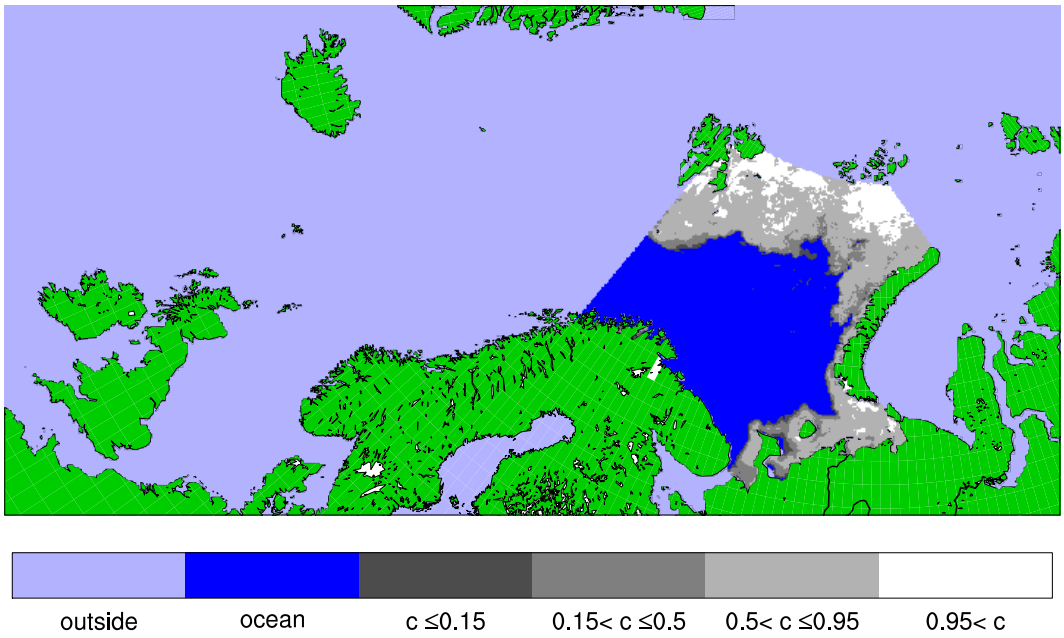

Figure S1. Map of the full SVIM simulation domain. The Barents Sea analysis region in the present study is displayed as a highlighted region where a sample sea ice concentration distribution is displayed. The shading of ice concentration values is given in the label bar, where c is in the sea ice concentration fraction. This sample shows the model results results for 2000-04-15, with the horizontal resolution from the SVIM experiment.

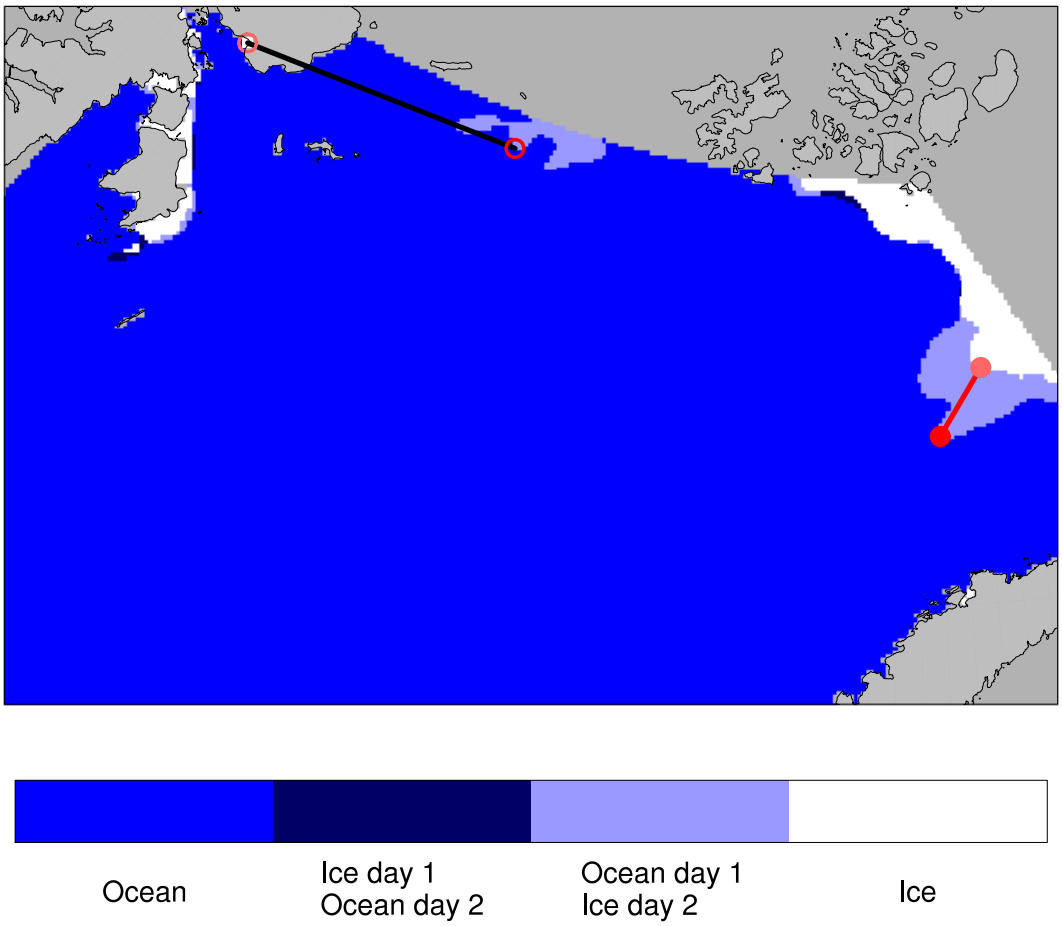

Figure S2. Sample scene displaying the changes in model sea ice extent from 2001-10-23 (day 1) to 2001-10-24 (day 2). The black line indicates the maximum displacement distance ($d_{max}^{2:1}$, given by equation 4) with the original algorithm, while the red line shows the result when grid nodes along the open boundaries and coastlines are included ($\tilde{\overline{L}}^{(1)}$ from equation 16). The color coding is given by the label bar, and note that only the northern part of the Barents Sea analysis region is displayed.

Table S1. Category distribution of displacement distances computed from equation 4, with $L^{(2)} = L^{(m,o)}(t_0 + \Delta t)$ and $L^{(1)} = L^{(m,o)}(t_0)$ as displayed in Figure 1, respectively.

Distance range	Fraction of grid cells	
	model results	observations
0 - 20	0	0.08
20 - 40	0.05	0.14
40 - 60	0.15	0.15
60 - 80	0.13	0.43
80 - 100	0.51	0.20
100 - 120	0.17	0