



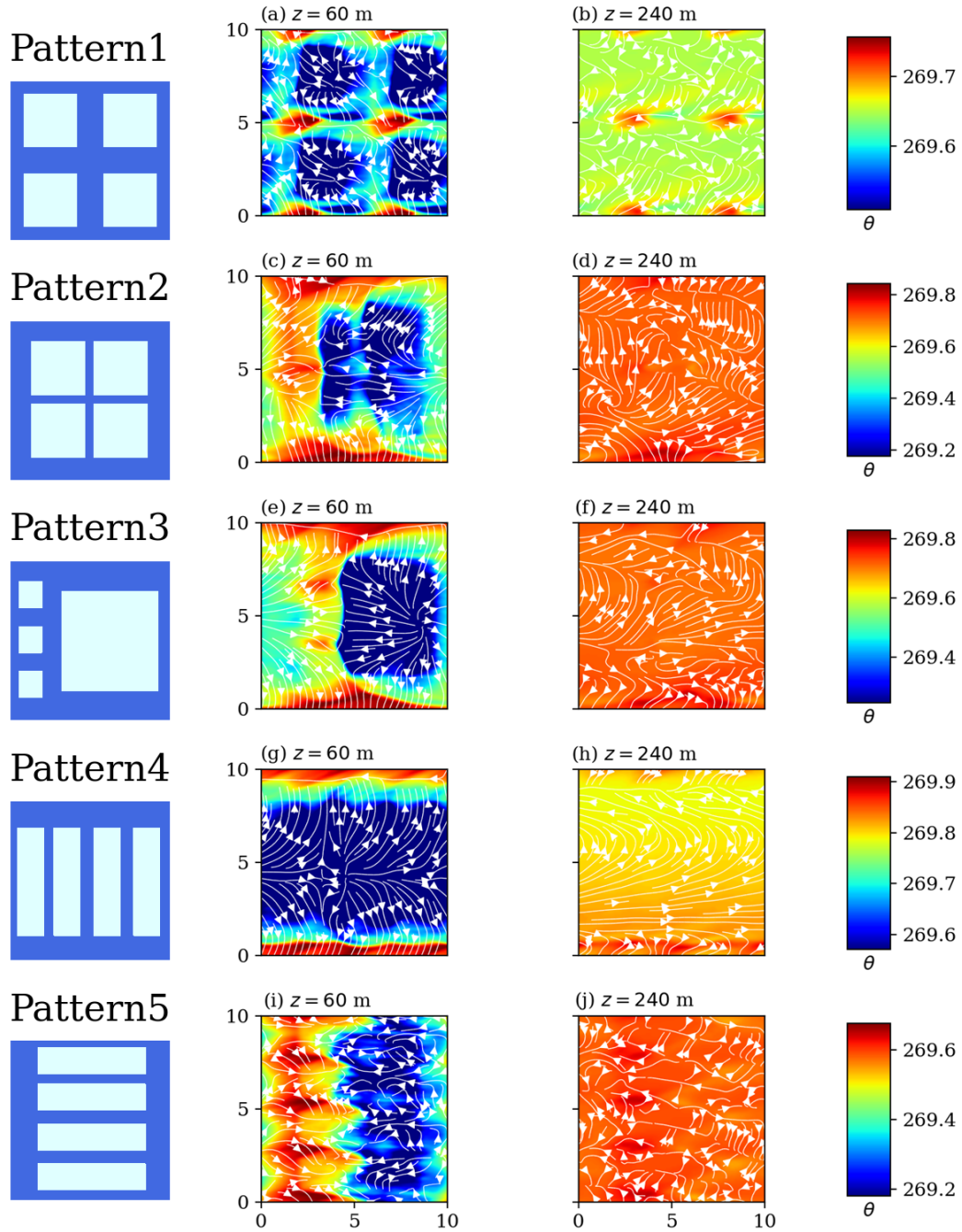
*Supplement of*

## **How many parameters are needed to represent polar sea ice surface patterns and heterogeneity?**

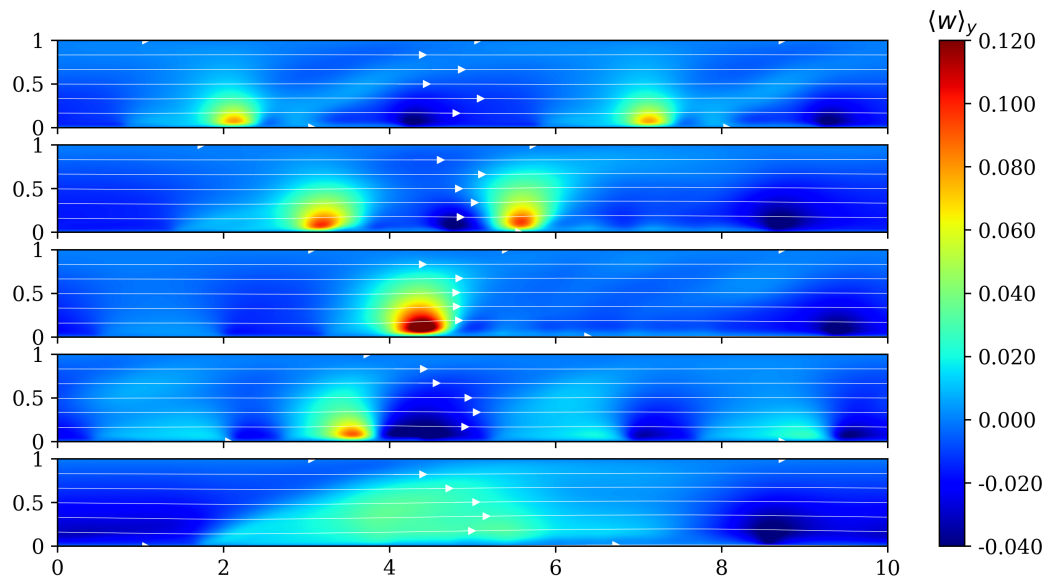
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**Figure S1.** An  $x - y$  planar view of  $\bar{\theta}$  in each pattern simulation in the corresponding paper. The left column is at a height of 60m and the right column is at a height of 240m. Streamlines represent the deviation from the mean wind,  $(u - u_g, v - v_g)$ . Each row represents a different simulation.



**Figure S2.** An  $x - z$  planar view of  $\langle \bar{w} \rangle_y$  in each pattern simulation. Each row represents a simulation (Pattern1 at the top, Pattern5 at the bottom) in the corresponding paper. Streamlines represent the mean wind,  $(u, w)$ .