Artificial patterns in spatially discrete models of cell migration and how to mitigate them

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Click with the left mouse button on each movie to start playing it on supported software like Adobe Acrobat and other compatible PDF viewers.

Movie S1: Simulation of the 2D polar alignment model on a square lattice. Model parameters are $\alpha_1 = 0, \alpha_2 = 0$. Checkerboard, worms, and immobile artifacts are observed.
Movie S2: Simulation of the 2D polar alignment model on a square lattice. Model parameters are $\alpha_1 = 1$, $\alpha_2 = 0$. Worms and immobile artifacts are observed, checkerboard artifacts decay quickly.
Movie S3: Simulation of the 2D polar alignment model on a square lattice. Model parameters are $\alpha_1 = 0$, $\alpha_2 = 0.7$. Checkerboard artifacts survive even after several time steps have elapsed.
Movie S4: Simulation of the 2D polar alignment model on a square lattice. Model parameters are $\alpha_1 = 1$, $\alpha_2 = 0.7$. No long-lived artifacts observed.
Movie S5: Simulation of the 2D polar alignment model on a hexagonal lattice. Model parameters are $\alpha_1 = 1$, $\alpha_2 = 0.7$. No long-lived artifacts observed.