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Cell swarming leads to vortex flow in early embryo formation ARIEL BALTER, Biocomplexity Insittute, Indiana University, JAMES A. GLAZIER, Biocomplexity Institute, Indiana University — A forming embryo can be though of as a confined region of incompressible medium. Vortex flow is observed in early embryo formation from *drosophila* fruit flies to mammals. The Navier-Stokes equation for fluid flow in a cavity is known to have stable vortex solutions. A model for cell motion in which cells move independently of their neighbors corresponds to high Reynolds number (Re) incompressible flow. An alternative cell-swarming model in which cells do influence their neighbors motion (through a mechanism known as *contact following*) corresponds to a flow model that is similar to low Re incompressible flow. Both models can potentially lead to stable vortex formation in a confined cavity. We investigate the applicability of both models to real biological systems

Ariel Balter
Biocomplexity Institute, Indiana University

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