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Zineb Hassainia* (zh14@nyu.edu), 251 Mercer St, New York, NY 10012. *Relative equilibria for active scalar equations.*

Vortex relative equilibria are configurations of vortices that maintain their basic shapes for all time, while rotating or translating rigidly in space. We shall discuss in this talk the immersion of these patterns where the underlying dynamics are governed by the two-dimensional Euler equations and the inviscid generalized surface quasi-geostrophic equations. The main concern is to establish the existence of rotating vortex patches for different topological structures including the pairs of patches and multi-polar vortex patches. The proofs are based on the bifurcation theory combined with the conformal parametrizations. (Received March 21, 2017)