

**Global bifurcation for corotating vortex pairs****Authors:**

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**Abstract:**

The existence of a local curve of corotating vortex pairs was proven by Hmidi and Mateu via a desingularization of a pair of point vortices. In this talk, we will present a global continuation of these local curves. That is, we consider solutions which are more than a mere perturbation of trivial solutions. Indeed, while the local analysis relies on the study of the linear equation at the trivial solution, the global analysis requires on a deeper understanding of topological properties of the nonlinear problem. For our proof, we adapt the powerful analytic global bifurcation theorem due to Buffoni and Toland, to allow for the singularity at the bifurcation point. This is a collaboration with Susanna V. Haziot.

**References:**

- [1] C. García, S. V. Haziot, Global bifurcation for corotating and counter-rotating vortex pairs. *Comm. Math. Phys.* (2023).