

## Hölder Regularity for Collapses of Point-vortices

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### **Abstract**

The point-vortex system is a system of differential equations arising in the context of inviscid planar fluid mechanics which models the dynamics for the centers of whirlpools. These equations are derived from the Euler 2D or the Surface Quasi-Geostrophic equations under the assumption that the vorticity of the fluid is sharply concentrated around some points (and formally replaced by Dirac masses). This system is well-posed as long as there are no collapses of point-vortices (between themselves or with the boundary). It is a natural question to wonder what is the behavior of this dynamical system in the neighborhood (in space or time) of a collapse and describe the blow-up. I will present in this talk my contributions to this problem, which are some results from my PhD thesis and very recent developpements in collaboration with Martin Donatin and Dragos Iftimie.