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Trinh Nguyen* (tnguyen5@usc.edu), USC Dornsife, Los Angeles, CA 90089, and **Toan Nguyen** (nguyen@math.psu.edu), Pennsylvania State University, State College, PA 16803.

Vanishing viscosity limit for the vortex-wave system.

We establish the inviscid limit of the incompressible Navier-Stokes equations on the whole plane \mathbb{R}^2 when the initial vorticity is a superposition of point vortices and a regular component. In particular, this rigorously justifies the vortex-wave system from the physical Navier-Stokes flows in the vanishing viscosity limit, a model that was introduced by Marchioro and Pulvirenti in the early 90s to describe the dynamics of point vortices in a regular ambient vorticity background. The proof rests on the previous analysis of Gallay in his derivation of the vortex-point system. (Received March 09, 2021)