SOLUTIONS OF THE INCOMPRESSIBLE EULER EQUATIONS WITH CONCENTRATED VORTICITY

MONICA MUSSO

I will discuss solutions to the incompressible Euler equation in two dimensions with vorticity close to a finite sum of Dirac deltas (vortices). The law of motion of the vortices was known formally for a long time and proved rigorously by Marchioro-Pulvirenti. In collaboration with Juan Davila (U. Bath), Manuel del Pino (U. Bath), and Juncheng Wei (UBC) we have a different point of view, which allows a very precise description of the solution near the vortices. Our construction can be generalized to other situations, such as the construction of leapfrogging vortex rings of the 3D incompressible Euler equations.

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