Vortex reconnection for the Navier–Stokes equation

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We will provide examples of periodic solutions of the 3d Navier–Stokes equation such that the topology of the vortex lines changes during the flow. We call this phaenomenon vortex reconnection. We will see that vortex reconnection can happen for arbitrarily small viscosity and arbitrarily large data.

References

Alberto Enciso, Renato Lucà and Daniel Peralta-Salas, Vortex reconnection in the three dimensional Navier–Stokes equations, *Advances in Mathematics*, **Volume no. 309** (2017), pp. 452–486 .

Joint work with: Alberto Enciso (*ICMAT, Madrid*), Daniel Peralta-Salas (*ICMAT, Madrid*).