

The binormal flow and the evolution of viscous vortex filaments.

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Résumé

I'll present the so called Localized Induction Approximation that describes the dynamics of a vortex filament according to the Binormal Curvature Flow (BF). I'll give a result about the desingularization of the Biot-Savart integral proved with Marco A. Fontelos within the framework of Navier-Stokes equations. Some particular examples regarding BF obtained with Valeria Banica will be also considered. These examples allow to connect BF with the so-called Riemann non-differentiable function and the Frisch-Parisi approach to turbulence.