

# Generating singularities in the binormal flow

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## Abstract

Generating singularities in the binormal flow The binormal flow is the classical model for vortex filament dynamics in 3D fluids. We give conditions on the curvature and torsion of a smooth curve to guarantee evolution by the binormal flow generating singularities in finite time. This is obtained via the Hasimoto transform from a new blow-up mechanism we describe for the 1D cubic Schrödinger equation.

This is a joint work with Renato Lucà, Nikolay Tzvetkov and Luis Vega.