(light) PhD seminar

13th November 2018, 17:30
Seminar Room, BCAM

Evolution of the Vortex Filament Equation (VFE) for some Polygonal curves

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The VFE describes the self-induced motion of a vortex filament in three dimensions and some of its explicit solutions are a line, circle and, helix. In their recent work on regular planar polygons, de la Hoz and Vega proved that the dynamics of a circle is not stable. In this talk, through some numerical experiments, we will try to understand this statement and see how it holds in the case of a helix and a line as well. Also, with some algebraic results, we will see how the approximation of these curves through polygonal lines is related to the optical phenomena "Talbot effect".

References:

[1] F. de la Hoz and L. Vega. Vortex filament equation for a regular polygon. Nonlinearity, 27(12):3031–3057, 2014.