

**Dynamical Systems Associated to the Formation of
Some Hydrodynamic Singularities**
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Abstract: The appearance of singularities in hydrodynamic problems plays an important role in many physical and industrial processes. Phenomena such as the breakup of a column of water into droplets or the closing of a column of air left by a solid object impacting on a pool of water, give rise to singularities in the solutions of the hydrodynamic models. These singularities can be described with a dynamical system for a small number of degrees of freedom.

Interestingly, dynamical objects such as fixed points, centre manifolds, limit cycles, etc. translate into different mechanisms for singularity formation that have been observed experimentally. We will present various examples of such behaviors and also discuss the issue of continuation of solutions after the formation of a singularity as well as its physical significance.