Kinetic equations and turbulence

Reconstruction of Barenblatt profiles, scalar shock waves and Kelvin-Helmholtz instabilities by space-time convex optimisation

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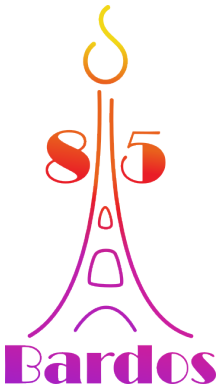
There is a large class of evolution equations, for which the initial value problem can be solved by space-time convex optimisation methods. This includes several equations that have been studied a lot by Claude Bardos (Euler equations of incompressible flows, entropic conservation laws etc...). This method is also related to the theory of convex integration and provides interesting generalized solutions which are not weak solutions (in the standard sense), in particular in the case of incompressible inviscid fluids with Kelvin-Helmholtz instabilities.



In honor of Claude Bardos's 85th birthday