

## *h*-Principle and fluid dynamics

In the early nineties Scheffer produced a complicated example of a nontrivial weak solution of the incompressible Euler equations which is compactly supported in space and time. Subsequent papers by Shnirelman produced other examples of quite irregular solutions by different, yet complicated, methods.

In a recent joint work with László Székelyhidi we have used a suitable “*h*-principle” to produce solutions with the same behavior in a relatively simple way. Our approach answers to further questions left open by the works of Scheffer and Shnirelman, some of which might be relevant in the theory of turbulence. The same kind of analysis has surprising applications also to the theory of hyperbolic systems of conservation laws.