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*Constructions of weak solutions of the Euler equations*

Weak solutions of the Euler equations are intended to describe turbulent motion of the slightly viscous fluid at very high Reynolds numbers. Important classes of weak solutions were constructed in recent works of C. De Lellis, L. Szekelyhidi and others following the seminal work of V. Scheffer. However, the physical significance of these solutions is not certain because they are too “flexible”. In fact, there are some hidden forces (“ghost forces”) driving these flows. In the present talk I’m going to show some other methods to construct weak solutions which appear to be more physically meaningful.