

First Joint Meeting Brazil Italy of Mathematics
Special Session: Control and Asymptotics of Nonlinear
PDE Dynamics

Rio de Janeiro, August 29 - September 02, 2016

Title: On well/ill posedness of certain problems in fluid mechanics

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Abstract: We discuss several systems of partial differential equations arising in the mathematical theory of compressible *inviscid* fluids. We show that one can always assert the existence of infinitely many weak solutions that are global in time and emanate from the same initial data. In addition, we show that there is a large class of initial data for which these problems admit infinitely many solutions satisfying, in addition, a variant of energy inequality. The results are based on application of the method of convex integration.