Loss of regularity for transport equations with rough velocities
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I will discuss examples of flows with non-Lipschitz, divergence-free velocities for which solutions of the Cauchy problem for the associated transport equation with smooth initial data loose Sobolev regularity at any positive time. The regularity of the flow is in the framework of the Di Perna-Lions-Ambrosio theory of renormalized solutions.

This is a joint work with Giovanni Alberti (Pisa) and Gianluca Crippa (Basel).