The non-homogeneous Euler equations below the Lipschitz threshold

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The incompressible Euler equations are well-known to be globally well-posed in the case of space dimension $d = 2$, both in the strong solutions framework and in the Yudovich framework. No results of that kind are known for the non-homogeneous (that is, density-dependent) incompressible Euler system.

In this talk, we show that both problems (*i.e.*, global well-posedness and theory *à la Yudovich* for the density-dependent case) can be reduced to the study of a non-linear geometric quantity, which encodes the regularity of the velocity field along the level lines of the density. Such a geometric regularity places itself below the Lipschitz threshold.