

Long time regularity of the 2D Euler-Poisson system for electrons with vorticity

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The Euler-Poisson system for electrons is one of the simplest two-fluid models used to describe the dynamics of a plasma. From the point of view of analysis, it can be reformulated as a system consisting of a quasilinear hyperbolic PDE coupled with a transport-type PDE. In this talk, we will discuss the long time existence for the two-dimensional Euler-Poisson system, with a particular attention to the dependence of the time of existence on the size of the vorticity. This talk is based on joint work with A. Ionescu (Princeton).

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