

Low stratification of the complete Euler system.

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Abstract

We use the concept of dissipative measure-valued solutions to show the rigorous derivation of the Euler-Boussinesq (EB) system that has been successfully used in various meteorological models. In particular, we show that EB system can be obtained as a singular limit of the complete Euler system. We provide two types of result – firstly, we treat the case of well-prepared initial data for any sufficiently regular bounded domain. Secondly, we use the dispersive estimates for acoustic equation to tackle the case of the ill-prepared initial data on an unbounded exterior domain. This is a joint work with Jan Brezina.