A CHARACTERIZATION OF 2D BOUNDED SOLUTIONS TO THE EULER EQUATIONS

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I will give an overview of recent work characterizing all possible weak solutions to the 2D Euler equations in the full plane or the exterior of a single obstacle having bounded velocity and bounded vorticity. We require of these solutions only that the vorticity be transported by the flow map. The class of all such solutions generalizes the solutions obtained originally by Phillipe Serfati in 1995 for the full plane, which have sublinear pressure. For more general solutions a condition at infinity, in terms of the velocity or the pressure, holds weakly, and the circulation about the obstacle can vary for an exterior domain. My results build on those of joint work with Ambrose, Lopes Filho, and Nussenzveig Lopes.