



The 2D Euler equation on singular domains

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We establish the existence of global weak solutions of the 2D incompressible Euler equation, for a large class of non-smooth open sets. These open sets are the complements (in a simply connected domain) of a finite number of connected compact sets with positive capacity. Existence of weak solutions with L^p vorticity is deduced from an approximation argument, that relates to the so-called Γ -convergence of domains. Our results complete those obtained for convex domains, or for domains with asymptotically small holes. Connection is made to the recent papers of the second author on the Euler equation in the exterior of a Jordan arc.

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