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# Uniqueness of the 2D Euler equation on rough domains

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We consider the 2D incompressible Euler equation on a bounded simply connected domain. We give sufficient conditions on the domain so that for all bounded initial vorticity, the weak solutions are unique. Our sufficient conditions allow us to prove uniqueness for a large subclass of  $C^{1,\alpha}$  domains and convex domains. Previously uniqueness for general bounded initial vorticity was only known for  $C^{1,1}$  domains with possibly a finite number of acute angled corners. The fundamental barrier to proving uniqueness below the  $C^{1,1}$  regularity is the fact that for less regular domains, the velocity near the boundary is no longer log-Lipschitz. We overcome this barrier by defining a new change of variable which we then use to define a novel energy functional. This is joint work with Andrea Nahmod.

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