Xu, Xiaoqian

Fast growth of the vorticity gradient in symmetric smooth domains for 2D incompressible ideal flow. (English) Zbl 1339.35251

J. Math. Anal. Appl. 439, No. 2, 594-607 (2016).

Summary: We construct initial data for the two-dimensional Euler equation in a bounded smooth symmetric domain such that the gradient of vorticity in L^∞ grows as a double exponential in time, for all time. Our construction is based on the recent result by *A. Kiselev* and *V. Šverák* [Ann. Math. (2) 180, No. 3, 1205–1220 (2014; Zbl 1304.35521)].

MSC:

35Q35 PDEs in connection with fluid mechanics

76B03 Existence, uniqueness, and regularity theory for incompressible inviscid fluids

Keywords:

2D Euler equation; hyperbolic flow; Green function

Full Text: DOI arXiv

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