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A moment model for vortex interactions of the two-dimensional Euler equations. I. Computational validation of a Hamiltonian elliptical representation. (English) Zbl 0602.76026
J. Fluid Mech. 167, 95-115 (1986).

The authors consider the evolution of finite uniform vorticity regions in an unbounded inviscid fluid. A perturbation analysis is performed based on the assumption that the regions are far away from each other and are nearly circular. Some computational comparisons with solutions obtained from the contour-dynamical representation of the two-dimensional Euler equations are reported. The authors then conclude, using numerical evidence, that their model is useful and quite accurate.

Reviewer: J.Burbea

MSC:

[76B47](#) Vortex flows for incompressible inviscid fluids
[76E30](#) Nonlinear effects in hydrodynamic stability
[35Q30](#) Navier-Stokes equations

Cited in **2** Reviews
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Keywords:

evolution of finite uniform vorticity regions; unbounded inviscid fluid; perturbation analysis; contour-dynamical representation; two-dimensional Euler equations

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