

Abstract Submitted
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Moment model for interacting dipoles in two-dimensional flows

YUKO MATSUMOTO, Numazu Natl Coll of Tech, KAZUYUKI UENO, Iwate University — A dynamical system for interacting dipolar vortices in two-dimensional incompressible flows is presented. Each dipole has a finite self-propelling velocity which translates itself in the direction perpendicular to the straight line between two vortices comprising the dipole in a fluid at rest. The system of interacting N dipoles is described by a set of ordinary differential equations for centroids and dipole moments. This system conserves linear impulse and angular impulse. Using this system for the case of collision of two dipoles, the evolution and instability are discussed.

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