

Applications of a new calculus for ideal hydrodynamics

Darren G. Crowdy, Imperial College London

Abstract:

In classical fluid dynamics, an important basic problem is to understand how solid bodies (e.g. aerofoils, obstacles or stirrers) immersed in an ideal fluid interact by “communicating” with each other through the ambient fluid. In recent work the speaker has shown that there is a way to formulate the theory of ideal hydrodynamics so that the relevant fluid dynamical formulae are exactly the same irrespective of the number of interacting objects. This talk will outline the idea of the approach and survey some interesting recent uses of it in applications.