Special Issue

Vortex Definition and Identification

Message from the Guest Editor

Vortices are omnipresent in the universe and affect human life and the environment. A vortex is intuitively recognized as a rotational or swirling fluid motion and develops under diverse conditions. Examples are hurricanes and tornadoes, river and ocean currents, and recirculation and turbulence that develops in pipes and near airplane wings, to mention just a few. Biological organisms, moreover, use the principles behind vortex generation for propulsion and transport. Despite the importance of vortex structures in everyday life, we still do not fully understand vortex generation and its dynamics, and little is known about how to control vortices to avoid their potentially devastating adverse effects. This Special Issue aims to collect a series of papers on vortex definition, identification, and applications including subgrid models for LES, especially using new methods like Liutex and third-generation vortex definition and identification.

Guest Editor

Prof. Dr. Chaoqun Liu

Department of Mathematics, University of Texas at Arlington, Arlington, TX 76019, USA

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Fluids
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
fluids@mdpi.com

mdpi.com/journal/fluids

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Editor-in-Chief

Prof. Dr. D. Andrew S. Rees
Department of Mechanical Engineering, University of Bath, Bath BA2 7AY, UK

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