Editor-in-Chief
Prof. Heuy-Dong Kim
Andong National University, South Korea

Associate Editor
Prof. Mohammad Mehdhi Rashidi
Bu-Ali Sina University, Hamedan, Iran

Editorial Board
Prof. Saeid Abbasbandy
Imam Khomeini International University, Iran
Prof. Ramesh K. Agarwal
Washington University in St. Louis, USA
Dr. Wei Bai
Manchester Metropolitan University, UK
Prof. Mostafa Barigou
The University of Birmingham, UK
Prof. Bin Chen
Xi’an Jiaotong University, China
Prof. Juergen Czarske
University of Technology, Germany
Prof. Sandip Ghosal
Northwestern University, USA
Prof. Anup Gokarn
Flow Science Inc., USA
Prof. Russell G. Keanini
University of North Carolina, USA
Prof. M. Masud K. Khan
Central Queensland University, Australia
Dr. Rajan Kumar
Florida State University, USA
Prof. Mario Mlsale
University of Genoa, Italy
Dr. Khaled A. Sallam
Oklahoma State University, USA
Prof. Richard Saurel
Aix-Marseille University, France
Prof. José R. Serrano
Universidad Politécnica de Valencia, Spain
Dr. Bhupendra Kumar Sharma
BITS Pilani, India
Dr. Makoto Umeki
University of Tokyo, Japan
Prof. Hamit Yurtseven
Middle East Technical University, Turkey
Table of Contents

Volume 9  Number 4  December 2019

Practical Applications of the Large-Eddy Simulation Technique for Wind Environment Assessment around New National Stadium, Japan (Tokyo Olympic Stadium)
T. Uchida, R. Araya ................................................................. 269

An Attempt to Evaluate the Cycloidal Rotor Fan Performance
T. Staśko, S. Dykas, M. Majkut, K. Smołka .......................................................... 292

Fore-Body Side Vortex of KVLCC2 at 30˚ Drift: A Trailing Vortex Resolved with DES and Compared to PIV Data
D.-F. Feder, I. Shevchuk, A. Sahab, L. Gerwers, M. Abdel-Maksoud .......................................................... 303

Numerical Simulation of the Natural Convection in a Tunnel Whose Floor Has a Variable Sinusoid with a Roof Opening
O. Drame, C. Mbow, F. Bode ................................................................. 326

Application of Diffusion Hydrodynamic Model for Overland Flows
T. V. Hromadka II, P. Rao ................................................................. 334

Aerodynamic versus Ballistic Flight
J. Denur ................................................................. 346
Open Journal of Fluid Dynamics (OJFD)
Journal Information

SUBSCRIPTIONS

The *Open Journal of Fluid Dynamics* (Online at Scientific Research Publishing, https://www.scirp.org/) is published quarterly by Scientific Research Publishing, Inc., USA.

**Subscription rates:**
Print: $79 per issue.
To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

**Advertisements**
Advertisement Sales Department, E-mail: service@scirp.org

**Reprints (minimum quantity 100 copies)**
Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.
E-mail: sub@scirp.org

COPYRIGHT

**Copyright and reuse rights for the front matter of the journal:**
Copyright © 2019 by Scientific Research Publishing Inc.
This work is licensed under the Creative Commons Attribution International License (CC BY).
http://creativecommons.org/licenses/by/4.0/

**Copyright for individual papers of the journal:**
Copyright © 2019 by author(s) and Scientific Research Publishing Inc.

**Reuse rights for individual papers:**
Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

**Disclaimer of liability**
Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:
E-mail: ojfd@scirp.org
Call for Papers

Open Journal of Fluid Dynamics

ISSN: 2165-3852 (print) ISSN: 2165-3860 (online)
https://www.scirp.org/journal/ojfd

Open Journal of Fluid Dynamics (OJFD) is an international journal dedicated to the latest advancement of fluid dynamics. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of applied science.

Editor-in-Chief
Prof. Heuy-Dong Kim
Andong National University, South Korea

Associate Editor
Prof. Mohammad Mehdi Rashidi
Bu-Ali Sina University, Hamedan, Iran

Editorial Board
Prof. Saeid Abbaspandby
Prof. Ramesh K. Agarwal
Dr. Wei Bai
Prof. Mostafa Barigou
Prof. Bin Chen
Prof. Juergen Czarske
Prof. Sandip Ghosal
Prof. Anup Gokarn
Prof. Russell G. Keanini
Prof. M. Masud K. Khan
Dr. Rajan Kumar
Prof. Mario Misale
Dr. Khaled A. Sallam
Prof. Richard Saurel
Prof. José R. Serrano
Dr. Bhupendra Kumar Sharma
Dr. Makoto Umeki
Prof. Hamit Yurtseven

Subject Coverage
All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

| Aerodynamics                  | Free Shear Layer Flow | Non-Newtonian Flow       |
|-------------------------------|-----------------------|--------------------------|
| Bio-Fluid Mechanics           | Heat and Mass Transfer| Physical-Chemical Hydrodynamics |
| Boundary Layer Flow           | High-Speed Flow       | Plasma Dynamics           |
| Combustion and Reacting Flow  | Hydrodynamic          | Radiation Hydrodynamics  |
| Compressible Flow             | Jet and Wake Flow     | Rotating and Stratified Fluid |
| Computational Fluid Dynamics  | Magnetic Fluid        | Rotating Flow            |
| Environmental Fluid Dynamics  | Micro and Nano Fluidics| Seepage Mechanics       |
| Environmental Fluid Mechanics | Micro Fluid Dynamics  | Theoretical Fluid Dynamics|
| Experimental Fluid Mechanics  | Multi-Phase Flow      | Turbulence Theory         |
| Fluid Mechanics               | Multiphase Fluid Dynamics| Viscous Fluid            |
| Fluid-Structure Interaction   | Naval Hydrodynamics   |                          |

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques.

Notes for Prospective Authors
Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

Website and E-Mail
https://www.scirp.org/journal/ojfd
E-mail: ojfd@scirp.org