

Daniel V. Foti

CONTACT INFORMATION

Department of Mechanical Engineering
University of Memphis
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EDUCATION

University of Minnesota, Minneapolis, Minnesota, USA

Ph.D., Mechanical Engineering, December, 2016

Georgia Institute of Technology, Atlanta, Georgia, USA

M.S., Aerospace Engineering, December, 2012

Case Western Reserve University, Cleveland, Ohio, USA

B.S., Aerospace Engineering, May, 2009

REFERRED JOURNAL PUBLICATIONS

1. **D. Foti**, X. Yang, L. Shen, and F. Sotiropoulos. Effect of wind turbine nacelle on turbine wake dynamics in large wind farms, *Journal of Fluid Mechanics*, 869, 1-26, 2019
2. **D. Foti**, X. Yang, F. Campagnolo, D. Maniaci, and F. Sotiropoulos. On the wake meandering of a model wind turbine operating in two different regimes, *Physical Reviews Fluids*, 3, 054607 (2018).
3. **D. Foti** and K. Duraisamy. Multi-dimensional finite volume scheme for the vorticity transport equations, *Computer and Fluids*, 167, 17-32, 2018.
4. **D. Foti**, X. Yang, and F. Sotiropoulos. Similarity of wake meandering for different wind turbine designs for different scales, *Journal of Fluid Mechanics*, 842, 5-25, 2018.
5. **D. Foti**, X. Yang, F. Campagnolo, D. Maniaci, and F. Sotiropoulos. On the use of spires for generating inflow conditions with energetic coherent structures in large eddy simulation. *Journal of Turbulence*, Vol. 18, Iss. 7, 2017.
6. **D. Foti**, X. Yang, M. Guala, and F. Sotiropoulos. Wake meandering statistics of a model wind turbine: Insights gained by large eddy simulations. *Physical Review Fluids* 1, 044407 (2016).
7. **D. Foti**, X. Yang, and F. Sotiropoulos, Uncertainty quantification of infinite aligned wind farm performance using non-intrusive polynomial chaos and a distributed roughness model. *Wind Energy*, (2016). doi: 10.1002/we.2072.
8. I. Chterev, C.W. Foley, **D. Foti**, S. Kostka, A.W. Caswell, N. Jiang, A. Lynch, D.R. Noble, S. Menon, J.M. Seitzman, and T. Lieuwen. Flame and flow topologies in an annular swirling flow. *Combustion Science and Technology* 186(8), 1041-1074 (2014).

CONFERENCE PROCEEDINGS

1. **D. Foti** and K. Duraisamy. Implicit large-eddy simulation of wind turbine wakes and turbine-wake interactions using the vorticity transport equations In 2019 Fluid Dynamics Conference, AIAA Aviation Forum, June, 2019
2. **D. Foti** and K. Duraisamy. An investigation of an implicit large-eddy simulation framework for the vorticity transport equations. In 2018 Fluid Dynamics Conference, AIAA Aviation Forum, June, 2018.

3. R. Techentin, **D. Foti**, S. Al-Saffar, P. Li, E. Daniel, B. Gilbert, and D. Holmes. Characterization of semi-synthetic dataset for big-data semantic analysis. In High Performance Extreme Computing Conference (HPEC), September, 2014.
4. R. Techentin, **D. Foti**, P. Li, E. Daniel, B. Gilbert, D. Holmes, and S. Al-Saffar. Development of a semi-synthetic dataset as a testbed for big-data semantic analytics. In Semantic Computing (ICSC), 2014 IEEE International Conference, June, 2014.
5. **D. Foti** and S. Menon. Flame stabilization modes in lean premixed swirl stabilized combustion. In 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit. August, 2012.
6. I. Chterev, **D. Foti**, J. Seitzman, S. Menon, and T. Lieuwen. Flow field characterization in a premixed, swirling annular flow. In 50th AIAA Aerospace Sciences Meeting, January, 2012.

CONFERENCE
PRESENTATIONS

1. **D. Foti** and K. Duraisamy. Multi-dimensional upwinding-based implicit LES for the vorticity transport equations, In American Physical Society Division of Fluid Dynamics Meeting. Denver, CO, November, 2017.
2. **D. Foti** and K. Duraisamy. Multi-dimensional wave propagation scheme for the vorticity transport equation. In Southeast Michigan Postdoctoral Symposium. Detroit, MI, October, 2018.
3. **D. Foti**, X. Yang, L. Shen, F. Sotiropoulos. A numerical investigation of the role of the turbine rotor scale and the nacelle on wake meandering. In American Physical Society Division of Fluid Dynamics Meeting. Portland, OR, November, 2016.
4. X. Yang, **D. Foti**, F. Sotiropoulos. Effect of nacelle on the wake meandering in Horns Rev wind farm. In American Physical Society Division of Fluid Dynamics Meeting. Portland, OR, November, 2016.
5. **D. Foti**, X. Yang, M. Guala, and F. Sotiropoulos. Effect of nacelle on wake meandering in a laboratory scale wind turbine using LES. In American Physical Society Division of Fluid Dynamics Meeting. Boston, MA, November, 2015.
6. X. Yang, **D. Foti**, C.L. Kelley, and F. Sotiropoulos. Large-Eddy simulation of SWiFT turbines under different wind directions. In North American Wind Energy Academy 2015 Symposium. Blacksburg, VA. June, 2015.
7. **D. Foti**, K. Howard, X. Yang, M. Guala, and F. Sotiropoulos. Hub vortex instability and wake dynamics in axial flow wind turbines. In American Physical Society Division of Fluid Dynamics Meeting. San Francisco, CA, November, 2014.

PROFESSIONAL
EXPERIENCE

- University of Memphis**, Memphis, Tennessee, USA
 Department of Mechanical Engineering
Assistant Professor **August, 2019 - present**
- University of Michigan**, Ann Arbor, Michigan, USA
 Department of Aerospace Engineering
Postdoctoral Fellow **March, 2017 - August, 2019**
- University of Minnesota**, Minneapolis, Minnesota, USA
 St. Anthony Falls Laboratory
Research and Teaching Assistant **August, 2013 - March, 2017**

Mayo Clinic, Rochester, Minnesota, USA
Biomedical Imaging Resource
Research Software Engineer **January, 2012 - August, 2013**

Georgia Institute of Technology, Atlanta, Georgia, USA
Computational Combustion Laboratory
Research Assistant **August, 2009 - December, 2011**

General Electric Aviation, Cincinnati, Ohio, USA
Engineering Intern **January, 2008 - August, 2008**

TEACHING
EXPERIENCE

University of Memphis, Memphis, Tennessee, USA
ME 4339/6339 – Applied Computational Fluid Dynamics
Instructor **Fall, 2019**

University of Michigan Dearborn, Dearborn, Michigan, USA
ME 525 – Computational Fluid Dynamics
Instructor **Fall, 2018**

University of Michigan, Ann Arbor, Michigan, USA
Postdoctoral Short Course on College Teaching in Science and Engineering

University of Minnesota, Minneapolis, Minnesota, USA
ME 5332 – Introduction to Fluid Dynamics
Teaching Assistant **Fall, 2016**

SERVICE
EXPERIENCE

University of Michigan, Ann Arbor, Michigan, USA
Michigan Postdoctoral Association of the College of Engineering
Advisory Board Member

August, 2017 - August, 2019

Reviewer

- AIAA Science and Technology Forum and Exposition
- Computer & Fluids
- Journal of Wind Engineering and Industrial Applications
- Ocean Engineering
- Energies