

Nicholas Wimer

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EDUCATION

University of Colorado at Boulder, Ph.D. in Mechanical Engineering, Boulder, CO May 2018
Concentration: Thermo-Fluids (GPA 3.90)
Coursework includes: Turbulenc;, Fluid Dynamics; Fluid Dynamics of Renewable Energy Systems; Reacting Flows; Numerical Analysis; Inverse Methods; Methods of Engineering Analysis I & II

Thayer School of Engineering, Bachelors of Engineering, Hanover, NH June 2013
Concentration: Mechanical Engineering - Fluid and Thermal Sciences (GPA 3.75)
Coursework includes: CFD; Heat, Mass & Momentum Transfer; Numerical Methods; Energy Utilization; Design Methodology

Dartmouth College, Bachelors of Arts, Hanover, NH June 2012
Major: Engineering Physics (GPA 3.69); *Minor:* Art History; Cumulative GPA 3.46
Coursework includes (major): Fluid Dynamics; Distributive Fields; Systems; Controls; Thermodynamics; Mechanics; Digital Electronics; Statistical Mechanics; Optics; Experimental Techniques; Intro to Computing; Quantum Mechanics; E&M

EXPERIENCE

National Renewable Energy Laboratory (NREL), Boulder, CO Fall 2013 - Winter 2014
Research Assistant/Intern
Work at the National Wind Technology Center (NWTC) on Vertical and Horizontal Axis Wind Turbine (VAWT and HAWT) analysis; implemented in Fortran a tool for predicting performance and loads of VAWTs. Helped develop a reworked version of AeroDyn for both VAWTs and HAWTs. Created a module for the new FAST framework, solving the transient equations.

Independent Research with OpenProp, Hanover, NH Winter 2013 - Spring 2013
Research Assistant (PI: Brenden Epps)
Helped improve OpenProp (a suite of MATLAB codes for propellor and rotor optimization) for wind turbine application. Contributed MATLAB algorithms as well as a BEM code for comparison and validation. Project is still ongoing with current students.

PUBLICATIONS/PRESENTATIONS

Field Line Distribution of Mass Density at Geostationary Orbit (Journal of Geophysical Research) 2015
Authors: Kazue Takahashi , Jinmyoung Lee , Christopher Zeitler , Nicholas Wimer , Lauren Litscher , Howard Singer , Kyungguk Min
Publication in progress.

American Geophysical Union 2011
PI: Richard Denton
“Density, composition, and field line dependence of bulk plasma at geosynchronous orbit versus local time, season, and solar cycle phase.” R. E. Denton, C. Zeitler, J. Amoh, H. Yang, K. Takahashi, M. F. Thomsen, R. R. Anderson, B. W. Reinisch, H. J. Singer, P. Tengdin, J. Huo, S. Taka, N. Wimer, and L. Litscher. AGU Fall Meeting Abstracts, page A2147, December 2011.

OTHER SKILLS & INTERESTS

Programming Languages: Fortran, MATLAB, C, Mathematica, Visual Basic
Software Packages: OpenFOAM, ParaView, Fluent, Gambit, AutoCAD, LaTeX, Excel
Hands-on design and machine experience