SVEN SCHMITZ
Department of Aerospace Engineering, The Pennsylvania State University

Research Areas of Interest

WIND TURBINE AERODYNAMICS: development of design-level vortex wake methods, wind turbine wakes, icing on wind turbines.

ROTORCRAFT AEROMECHANICS: free-wake methods for helicopter hover performance prediction, active rotor devices for performance enhancement, rotorcraft wake flows.

COMPUTATIONAL FLUID DYNAMICS: coupling near-field Navier-Stokes analyses with far-field vortex wake methods (Hybrid CFD).

Professional Preparation

RWTH Aachen, Germany	Aerospace Engineering	M.S., 2002
UC Davis	Mech.- & Aeronaut. Engineering	Ph.D., 2006
	Hybrid CFD & Free-Wake Solvers	Postdoctoral Fellow, 2006-2007
	for Wind Turbines and Rotorcraft	Project Scientist, 2007-2010

University Appointments

2010- Assistant Professor of Aerospace Engineering, Penn State University

Professional Appointments

2006-09 Consultant for Hybrid CFD on Wind Turbines (at UC Davis), GE Global Research, NY

2006 Lecturer in Thermodynamics & Heat Transfer, UC Davis

2002-06 Research Assistant, UC Davis

2001-02 Engineer, EADS Astrium Space, Munich (Germany)

Honors & Awards

2005 Professors For The Future Fellowship, UC Davis

2004 Joseph L. Steger Fellowship (for outstanding graduate work achievement in CFD), UC Davis

2004 Outstanding Graduate Student Teaching Award, UC Davis

Selected Publications

Schmitz, S., Bhagwat, M., and F. X. Caradonna. 2010. Physical and Numerical Issues in the Prediction of Free Wake Hover Performance, *American Helicopter Society 66th Annual National Forum,* Phoenix, AZ, May 2010.

Suzuki, K., Schmitz, S., and J. J. Chattot. 2010. Analysis of a Swept Wind Turbine Blade Using a Hybrid Navier-Stokes/Vortex-Panel Model, *Computational Fluid Dynamics 2010*, Springer, *to appear*.

Schmitz, S., and J. J. Chattot. 2007. Flow Physics and Stokes' Theorem in Wind Turbine Aerodynamics, *Computers and Fluids* **36**:1583-1587.

Schmitz, S., and J. J. Chattot. 2007. Method for Aerodynamic Analysis of Wind Turbines at Peak Power, *AIAA Journal of Propulsion and Power, Technical Note* **23**:243-246.

Schmitz, S., and J. J. Chattot. 2006. Characterization of Three-Dimensional Effects for the Rotating and Parked NREL Phase VI Wind Turbine, *ASME Journal of Solar Energy Engineering* **128**:445-454.

Schmitz, S., and J. J. Chattot. 2005. A Parallelized Coupled Navier-Stokes/Vortex-Panel Solver, *ASME Journal of Solar Energy Engineering* **127**:475-487.