Vivek Srikrishnan, Ph.D Candidate

Contact Information

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Pennsylvania State University
State College, PA 16802 USA

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Research Interests

- Solar resource assessment
- Forecasting intermittency of solar resource
- Sustainable energy systems planning and operations
- Spatio-temporal statistical methods
- Stochastic optimization methods

Education

Pennsylvania State University, State College, PA

Ph.D., Energy and Mineral Engineering, Expected August 2018

- Thesis Topic: *Forecasting Solar Resource Intermittency*
- Advisors:
  Professor Jeffrey R.S. Brownson
  Professor George S. Young

M.S., Energy and Mineral Engineering, August 2015

- Thesis Topic: *Using Multi-Pyranometer Arrays and Neural Networks to Estimate Direct Normal Irradiance*
- Advisors:
  Professor Jeffrey R.S. Brownson
  Professor George S. Young

University of Illinois, Champaign-Urbana, IL

B.S., Mathematics, August 2004

B.A., Philosophy, August 2004

Awards

National Science Foundation

- Graduate Research Fellowship Honorable Mention, 2015

Pennsylvania State University

- Graduate School, Harold F. Martin Graduate Assistant Oustanding Teaching Award, 2011
- Department of Mathematics, Charles H. Hoover Memorial Award, 2010
- Department of Mathematics, Departmental Teaching Award, 2008
- Department of Mathematics, ZZRQ Award, 2006

Refereed Journal Publications

[1] V. Srikrishnan, G.S. Young, L. Witmer, and J.R.S. Brownson (2015), "Using multi-pyranometer arrays and neural networks to estimate direct normal irradiance," *Solar Energy* 119, 531-542. DOI: 10.1016/j.solener.2015.06.004.

Conference Publications

[2] Srikrishnan, V., J.R.S. Brownson, G.S. Young. "The All-Seeing Eye: Using Multi-Pyranometer Arrays and Neural Networks to Estimate Direct Normal Irradiance." In: *Proceedings of the 43nd American Solar Energy Society Meeting*, San Francisco, CA, July 7–9, 2014.

Conference Talks

[3] Srikrishnan, V. "Validity of Taylor's Hypothesis Across Time Scales: Implications for Solar Forecasting." In: *44nd American Solar Energy Society Meeting*, State College, PA, July 28–30, 2015.

[4] Srikrishnan, V. "The All-Seeing Eye: Using Multi-Pyranometer Arrays and Neural Networks to Estimate Direct Normal Irradiance." In: *43nd American Solar Energy Society Meeting*, San Francisco, CA, July 7–9, 2014.

TEACHING

Pennsylvania State University, State College, PA

Primary Instructor

- **Math 411, Ordinary Differential Equations.** Linear and nonlinear ordinary differential equations, index theory, bifurcations, applications, discrete dynamical systems. (Summer 2008, Summer 2010).
- **Math 251, Ordinary and Partial Differential Equations.** First and second order equations, existence and uniqueness, Laplace transforms, partial differential equations, Fourier series, applications. (Fall 2007, Spring 2008, Spring 2009).
- **Math 250, Ordinary Differential Equations.** First and second order equations, existence and uniqueness, Laplace transforms. (Fall 2006).
- **Math 232, Integral Vector Calculus.** Multidimensional analytic geometry, multiple integrals, potential fields. (Spring 2010).
- **Math 231, Calculus of Several Variables.** Analytic geometry, partial differentiation, parametric functions in space. (Fall 2004, Spring 2006).
- **Math 141, Calculus with Analytic Geometry II.** Derivatives, integrals, sequences and series, analytic geometry. (Fall 2009).
- **Math 140, Calculus with Analytic Geometry I.** Limits, derivatives, differentials, integrals. (Spring 2011).
- **Math 41, Trigonometry and Analytic Geometry.** Functions and graphs, exponential and logarithmic functions, trigonometry, conic sections. (Fall 2005, Fall 2010).

Teaching Assistant

- **EME 301, Thermodynamics in Energy and Mineral Engineering.** First and second laws of thermodynamics, electrochemistry, thermodynamics of mixtures (Fall 2014, Spring 2015).
- **Math 497C, Symplectic Geometry.** Differential forms, symplectic and contact geometry. Part of the MASS Program. (Fall 2008.)

PROFESSIONAL SERVICE

Referee Service

- *Solar Energy*, on behalf of Professor J.R.S. Brownson.

PROFESSIONAL EXPERIENCE

Pennsylvania State University, State College, PA

Research Assistant, Brownson Solar Research Group **August 2011 to January 2014**