



The Intelligent Systems and Control Laboratory in the Mechanical Engineering - Engineering Mechanics Department at Michigan Technological University invites applications for a

PhD Student Fellowship

in:

Wind Turbine Blade Modeling and Active Control

This position is made possible by the John and Cathi Drake Professorship in Mechanical Engineering and is available immediately. It includes tuition, a stipend of \$18,000/year, and health care benefits. Because of the collaborative nature of this opportunity, the student will likely have short-term assignments at US national laboratory facilities, further enhancing their educational experience.

Our research focuses on developing control system strategies for improving the performance of wind turbines. Model-based blade control, in the presence of fluid-structure interaction phenomena, is of particular interest. Recent developments in computationally efficient dynamic modeling of wind turbine blade dynamics offer the promise of increased closed-loop performance. System-level control is also an area of study to ensure that multiple performance objectives can be met with optimum energy efficiency.

We seek a motivated PhD student with a passion for modeling and control of active structures with particular application to wind turbine blades. A minimum of a Masters of Science degree is required in mechanical or aerospace engineering. In addition, the applicant must meet the requirements for Graduate School admission as described at: <http://www.mtu.edu/gradschool/admissions/requirements/>, including taking the Graduate Records Examination (GRE). Demonstrated experience in four of the following topics is desired: (1) hardware-in-the-loop simulation, (2) C or MATLAB programming, (3) advanced dynamics (e.g. Lagrange's Equations, Hamilton's Principle, etc.), (4) theoretical and applied finite element analysis, (5) optimization methods and (6) advanced controls (e.g. linear system theory, nonlinear control, optimal control, etc.).

Michigan Tech is in the small community of Houghton, Michigan. It lies in the heart of Michigan's scenic Keweenaw Peninsula, surrounded by Lake Superior and vast expanses of forest. It's an ideal location not only for study but also for enjoying outdoor recreation including backpacking, hiking, camping, fishing, and both alpine and cross-country skiing at Michigan Tech owned properties. For details visit: <http://www.mtu.edu/>.

To apply please send an email statement of interest and a .pdf of your resume to Professor Gordon Parker at ggparker@mtu.edu.