



Pacific Institute for the  
Mathematical Sciences



## **Dr. Ayşe Deniz Sezer**

University of Calgary

### **Title: A Markov Chain Gaussian Process framework for modeling wind speed over a large geographical area**

#### **Abstract:**

An important design consideration when modeling the joint statistical behaviour of wind speed measurements over multiple sites and time points is that the models should allow inference for future sites for which no historical measurements are available. Also, the models should be able to combine information from different databases of atmospheric measurements. In this talk, I will introduce a Markov Chain Gaussian process framework which achieves both design goals, describe the estimation procedure for the models considered and give an application to the short term forecasting of wind speed at over 100 weather stations in Alberta.

#### **Biography:**

Dr. Sezer received her Ph.D. in Operations Research from Cornell University in 2005. Prior to that she did her Bachelor's studies at Middle Eastern Technical University (Turkiye). From 2005-2008 she held a postdoctoral fellowship at York University. In 2008, she joined the faculty of the University of Calgary. Her research interests include Markov processes, martingale theory, applications to mathematical finance and more recently spatio-temporal processes and applications to wind energy. Dr. Sezer is one of the Principal Investigators of the PIMS Collaborative Research Group Forecasting and Mathematical Modeling for Renewable Energy (2023-2026).

**FRIDAY MARCH 8, 2024**  
**12:00 PM – 1:00 PM**  
**M1040**  
**SNACKS & COFFEE PROVIDED**