The Math/Stats Colloquium
Department of Mathematics and Statistics
San José State University

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UC Santa Cruz

Gradient Flows in Uncertainty Propagation and Filtering

October 10, 2018, MH320

Abstract: Propagation and estimation of uncertainties, subject to dynamics and measurement, are fundamental in science and engineering. Traditionally these problems are formulated and solved from a partial differential equation (PDE) viewpoint, where the idea is to compute the evolution of an underlying joint probability density function over time. In this talk, I will describe an emerging variational viewpoint, where one can interpret such evolution as gradient descent of some functional in a suitable infinite-dimensional manifold. I will portray the main conceptual ideas and the current research landscape for the same.

Background: Multivariable calculus and differential equations.

About the speaker: Abhishek Halder is an Assistant Professor in the Department of Applied Mathematics at UC Santa Cruz. He received his Ph.D. from Texas A&M University, and his B. Tech. and M. Tech. from Indian Institute of Technology, Kharagpur, all in Aerospace Engineering. His research interests are in stochastic systems and control with application focus on large scale cyber-physical systems.

Snacks in MH331B at 2:30 pm
Talk starts at 3:00 pm

For more information, see our full schedule at:

http://www.timhsu.net/colloq/