Department of Statistics

SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR

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Mathematical Foundations of Diffusion Models in Population Genetics

THURSDAY, October 22, 2015 at 4:30 PM
133 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

The basic forward model in population genetics is the Wright-Fisher Markov chain, and its diffusion limit is the Kimura diffusion in the simplex. This class of operators is difficult to analyze as the second order terms degenerate at the boundary. We will consider recent work (joint with Rafe Mazzeo and Camelia Pop) establishing the existence and regularity properties for these diffusions along with Harnack inequalities, heat kernel estimates, and a Feynmann-Kac representation formula.

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Lek-Heng Lim, Department of Statistics, lekheng@galton.uchicago.edu, Ridgway Scott, Departments of Computer Science and Mathematics, ridg@cs.uchicago.edu, Jonathan Weare, Department of Statistics and The James Franck Institute, weare@uchicago.edu. SSC Seminar URL: http://www.stat.uchicago.edu/seminars/SSC_seminars.shtml.

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