

DEGENERATE DIFFUSIONS IN POPULATIONS GENETICS

CHARLES EPSTEIN *

The infinite population limit of Markov chain models for the evolution of the makeup a population, under the effects of genetic drift, migration, mutation and selection, is generated by a degenerate elliptic operator on a manifold with corners. I will describe recent joint work with Rafe Mazzeo establishing existence, regularity, and uniqueness for a large class of parabolic equations of this type. This in turn implies the existence of a limiting strong Markov process, and the uniqueness of the solution to the Martingale problem.

*Department of Mathematics, University of Pennsylvania Philadelphia, email: cle@math.upenn.edu