1165-60-267 **Arnab Ganguly*** (aganguly@lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70820, and **P Sundar**. *Approximations of invariant distribution of ergodic diffusions: CLT and moderate deviations.*

The talk will focus on asymptotics of inhomogeneous integral functionals of an ergodic diffusion process under the effect of discretization. In particular, fluctuations from the corresponding functionals of the invariant distribution will be analyzed through central limit theorem and moderate deviation principle. The results will be particularly useful in understanding accuracy of an Euler discretization based numerical scheme for approximating functionals of invariant distribution of an ergodic diffusion. This is an infinite-time horizon problem, and the accuracy of numerical schemes in this context are comparatively much less studied than the ones used for generating approximate trajectories of diffusions over finite time intervals. The potential applications of these results also extend to other areas. This is a joint work with P. Sundar. (Received January 19, 2021)