

TALK 4: LARGE DEVIATIONS OF MEAN-FIELD INTERACTING PARTICLE SYSTEMS

P. Dupuis, Brown University, USA, Paul_Dupuis@brown.edu

K. Ramanan, Brown University, USA, Kavita_Ramanan@brown.edu

W. Wu, Brown University, USA, Wei_Wu@brown.edu

We establish a sample path large deviations principle for the empirical measure of finite-state mean-field weakly interacting particle systems. The rates of the empirical measure process diminish to zero as the boundary is approached and, hence, existing theorems on large deviations do not apply. Instead, we use a weak convergence approach to establish the result. We also discuss the implications of this large deviation principle for the long-time stability of such particle systems.