

**REFINEMENTS OF THE CENTRAL LIMIT THEOREM AND
LARGE DEVIATION PRINCIPLES FOR WEAKLY DEPENDENT
RANDOM VARIABLES**

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We discuss sufficient conditions that guarantee the existence of asymptotic expansions for the Central Limit Theorem and Large Deviation Principles for weakly dependent random variables including observations arising from sufficiently chaotic dynamical systems like piece-wise expanding maps, and strongly ergodic Markov chains. We primarily use spectral techniques to obtain these results. The work on the CLT is joint work with Carlangelo Liverani and the work on LDPs is joint with Pratima Hebbar.