

LAW OF LARGE NUMBERS FOR SOME MARKOV CHAINS ALONG NON HOMOGENOUS GENEALOGIES

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Abstract: We consider a population with non-overlapping generations, whose size goes to infinity. It is described by a discrete genealogy which may be time non-homogeneous and we pay special attention to branching trees in varying environments. A Markov chain models the dynamic of the trait of each individual along this genealogy and it may also be time non-homogeneous. We want to determine the evolution of the distribution of the traits among the population, namely the asymptotic behavior of the proportion of individuals with a given trait. In this talk, we show some laws of large numbers which rely on the ergodicity of an auxiliary process. A central limit is also established.