

Title : Asymptotics of spatial AR parameter estimation

Abstract: Asymptotic behavior of the maximum likelihood estimate of the parameters of a spatial AR model is investigated, aiming at an application to the test of Gaussianity of Cosmic Microwave Background (CMB). We show that the maximum likelihood estimate under normality is equivalent to the maximum Whittle's contrast estimate in case of the spatial AR but not necessarily so otherwise. Consistency of the maximum likelihood estimate holds true without normality and the asymptotic efficiency holds true in a sense of Fisher information.