# Statistical Inference for Spatial Auto-Linear Processes

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**Abstract:** Based on the finite denominator of the spectral density of an auto-linear process, we create another stationary process, for which the original parameters are its auto-correlations. We propose a new method of moments estimation for the parameters of interest, which if certain conditions are satisfied, produces consistent and asymptotically normal estimators. We manage to write down explicitly the variance matrix of our estimators, in terms of the parameters of the auto-linear formulation. We conclude with some simulations for first and second-order auto-normal processes on two dimensions, which investigate how our method can work in practice.