Approximate Confidence Sets for a Threshold Autoregressive Process

Shen-Chien Chen
Department of statistics, National Chengchi University, Taipei, Taiwan

Approximate confidence sets for the parameters of a threshold autoregressive process are obtained. First, a very weak type expansion for the distribution a normalized maximum likelihood estimator Z_n is derived. Next, the finite difference method is employed to approximate the mean and variance of Z_n. Then, the renormalized quantity is used to obtain approximate confidence sets. Simulation studies assess the accuracy of the method for small and moderate sample sizes of a two-parameter threshold autoregressive model.

[Shen-Chien Chen, Department of statistics, National Chengchi University, Taipei, Taiwan; sam601019@yahoo.com.tw]