Classical and Marginal Maximum Likelihood Estimation for Regression with Serially Correlated Error Components

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This paper is concerned with classical and marginal maximum likelihood estimation for regression with a serially correlated error components disturbances. We are sometimes unable to calculate classical and marginal maximum likelihood estimates for panel data sets with a very large number of observations using standard methods. With this in mind, we derive an efficient algorithm for classical and marginal maximum likelihood estimation for regression with a serially correlated one-way error components where the remainder disturbances follow AR(1), AR(2), and simple AR(4) error processes that makes use of Ansley's (1979) and King's (1986) algorithms. Evidence is presented to show that the proposed approach allows more efficient computation than the standard methods.

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