VAHID PARTOVI NIA, École Polytechnique de Montréal
Testing Variance Components in Linear Mixed Effects Models

Testing variance components with zero is a well-known and non-standard hypothesis testing problem in linear mixed effects models with many applications. We introduce a test statistic using the variance least square estimator and propose to approximate its finite sample distribution using a permutation procedure. The procedure covers test of multiple variance components and any subset of them which is barely feasible using the existing methodologies. An application of the proposed method is demonstrated on real data.