**Prepivoting composite likelihood statistics by weighted bootstrap iteration**

Nicola Lunardon

University of Trieste

The role played by the composite analogue of the log likelihood ratio in hypothesis testing and in setting confidence regions is not as prominent as it is in the canonical likelihood setting, since its asymptotic distribution is not pivotal. Approximate pivots based on the composite log likelihood ratio can be derived by using asymptotic arguments. However, tests and confidence regions based on such pivots may exhibit actual sizes and confidence levels that approach the nominal ones slowly.

The use of nonparametric bootstrap in the composite likelihood framework is suggested to be a viable alternative to asymptotic theory.

In particular, prepivoting a suitable statistic turns out to be a general and efficient resample strategy to reduce the error in rejection probability and the coverage error.