

# COLLOQUIUM

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## Benchmarked Small Area Estimators

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### Abstract

The paper considers benchmarking issues in the context of small area estimation. Both external and internal benchmarking are considered, and some indications are provided to find the relation between the two. Optimal estimators within the class of benchmarked linear estimators are found both under external and internal benchmarking. In addition, necessary and sufficient conditions for self-benchmarking are found for an augmented model. Most results of this paper are found using the idea of orthogonal projection.

*Key Words* : Augmented model, best linear unbiased, external, internal, optimal, orthogonal projection, SAIPE

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