MEDICAL UNIVERSITY OF VIENNA

Wiener Biometrische Sektion
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz

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A STATISTICAL FRAMEWORK FOR REPLICABILITY

June 8th, 2022 at 9:00 am

Jugendstilhörsaal der Medizinischen Universität Wien,

Spitalgasse 23, 1090 Vienna

(http://bit.ly/jugendstilhoersaal)

HOST: Martin Posch

ABSTRACT

We propose a unified statistical framework for replicability which simultaneously offers overall Type-I error control, an assessment of compatibility and a combined confidence interval. The approach is based on a recently proposed reverse-Bayes method for the analysis of replication success. We show how the method can be recalibrated to obtain a family of combination tests with exact overall Type-I error control. The approach avoids the double dichotomisation for significance of the two-trials rule and has larger project power to detect existing effects. It gives rise to a p-value function which can be used to compute a confidence interval for the underlying true effect. If the effect estimates are compatible, the resulting confidence interval is similar to the meta-analytic one, but in the presence of conflict, the confidence interval splits into two disjoint intervals. The proposed method is applied to data from the Experimental Economics Replication Project.

This is joint work with Charlotte Micheloud and Fadoua Balabdaoui