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Randomization Tests for Causal Inference with Interference
Between Units

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ABSTRACT

Many causal questions involve spillovers and interactions between units, also known as interference, for example between individuals in households, students in schools, or firms in markets. In this paper, we introduce the concept of conditioning mechanisms, which provides a framework for constructing valid and powerful randomization tests under general forms of interference. We describe our framework in the context of two-stage randomized designs and apply the resulting method to a randomized evaluation of an intervention targeting student absenteeism in the School District of Philadelphia. We show improvements over existing methods in terms of statistical power and computational feasibility.

Joint work with Guillaume Basse and Avi Feller

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