



Operations Research Seminar

Applications of Assignment Algorithms to Nonparametric Tests for Homogeneity

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14:50-15:15 Refreshment outside GL-239
15:15-16:15 Seminar at GL-115

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Both bipartite and nonbipartite assignment algorithms have noteworthy statistical applications. In sensor testing optimal bipartite assignments are made between truth objects and detections to assess classification and positional errors. In experimental design optimal nonbipartite assignments are made to partition $2n$ subjects into n matched pairs according to similarity measures. We explore the use of assignment algorithms to test whether one set of data is sampled from the same distribution as a control data set (bipartite), and to test whether one set of data is mean-stationary over time (nonbipartite). In both cases we propose new, nonparametric tests and we establish their sampling properties under the null hypothesis of homogeneity. Simulation results suggest that these tests have promising applications to multivariate statistical control and regime-change detection.