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## SEMINARIO

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## A dynamic perspective to evaluate multiple treatments through a causal latent Markov model

**Abstract:** We illustrate how to detect causal effects of multiple treatments on subpopulations of individuals from a dynamic perspective. The proposed Latent Markov (LM) model is based on the propensity score weights corresponding to the individual pretreatment covariates. The weights contribute to the likelihood function of the LM model and allow us to balance the groups receiving different treatments. The likelihood function is maximized through a modified version of the Expectation-Maximization algorithm, while standard errors for the parameter estimates are obtained by a nonparametric bootstrap method. The asymptotic properties of the causal effect estimator are illustrated in details as well as its finite sample properties through a series of simulations showing that the estimator has the expected behaviour. The empirical illustration is devoted to assess the relative effectiveness of certain degree programs on three ordinal response variables: contract type, skill and gross income of the graduates.

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**Martedì 4 Luglio 2017, ore 11.00**

**Aula 6 - Palazzo delle Scienze. Corso Italia 55, Catania**

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