



SPS Workshop 3<sup>rd</sup> term 2016-2017

# Matching Methods

Lecturer: Luke Keele (Georgetown University)

Organised by Simone Cremaschi, Giorgio Malet, and Julia Schulte-Cloos  
Sponsored by Fabrizio Bernardi and Diego Gambetta

19-20 June 2017  
Emeroteca, Badia Fiesolana

Credits: 10

Register [online](#)

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## Course Outline:

The workshop will teach participants both the fundamentals of matching estimators but also provide coverage of new recent developments in the statistics literature on matched. First, students will be taught the basic mechanics of who matching can be used to adjust for observed confounders. Comparisons and contrasts will be drawn with the familiar regression model approach to adjustment. Next, students will be introduced to the basic concepts involved in matching. Topics covered include distance matrices, optimal vs greedy algorithms, calipers, fine balance, and balance statistics. This section will include hands on tutorials using multiple real data sets. Finally, students will be introduced to the topic of multilevel matching where the goal is to balance covariates at two levels. For example, the goal might be to pair both voters and voting districts.

## Prerequisites:

Basic knowledge of regression and R

## Requirements:

The workshop is worth 10 credits upon fulfillment of all requirements. In order to obtain the 10 credits, participants are required to attend regularly and to hand in the exercises assigned during the workshop.

## Schedule:

The workshop is divided in three lectures:

1. Monday 19 June (14:00 - 18:30) - *The Statistical Logic of Matching*
2. Tuesday 20 June (13:30 - 16:30) - *The Mechanics of Matching*
3. Tuesday 20 June (16:30 - 19:00) - *Multilevel Matching*

## Readings:

- Keele, Luke (2015). *The Statistics of Causal Inference: A View from Political Methodology*. *Political Analysis* 23(3): 313-335.
- Rosenbaum, Paul R. (2010). *Design of Observational Studies*. Springer-Verlag.
- Stuart, Elizabeth A. (2010). *Matching Methods for Causal Inference: A Review and a Look Forward*. *Statistical Science* 25(1): 1-21.