

# Statistical analysis and parameter selection for Mapper

**Speaker : Bertrand Michel**

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Using the nerve of covers as a way to summarize, visualize and explore data is a natural idea that was first proposed in Singh et al. (2007), giving rise to the so-called Mapper algorithm. The idea of the Mapper algorithm is, given a well-chosen real valued function defined  $f$  on the data, to summarize it through the nerve of the refined pull back of the cover. The Mapper algorithm is very simple but it requires to tune several parameters. In this talk I will propose a statistical framework for Mapper and a well founded methodology to choose these parameters based on the recent result of Carriere and Oudot (2016).

Joint work with Mathieu Carriere and Steve Oudot.