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**Joint Meeting**

# GfKl - CLADAG 2010

**8-10 September 2010**
**Firenze (Italy)**

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# Spatial clustering for local analysis

Federico Benassi, Chiara Bocci, Alessandra Petrucci

The need for statistical information at detailed territorial level has greatly increased in recent years. This need is often related to the identification of spatially contiguous and homogeneous areas according to the phenomenon studied.

The aim of the paper lies in a review of methods for the analysis and detection of spatial clusters and in the application of a recently proposed clustering method. In particular, we discuss the nature and the developments of spatial data mining with special emphasis on spatial clustering and regionalization methods and techniques (Guo, 2008).

We present an original application using data from the statistical office of the city of Florence and the population census held in 2001. The first step of the analysis is devoted to describe the structure of the population of the study area. Then, we implement a regionalization model in order to get a classification of the study area into a number of homogeneous (with respect to the demographic structure) and spatially contiguous zones.

The empirical application shows that ignoring spatial clustering can lead to misleading inference and that, on the other hand, the use of appropriate methods for the detection of spatial clusters leads to meaningful inference of urban socio-economic phenomena. The results provide a considerable information to local authorities and policy makers for regional and urban planning: the application of local policies without taking into account spatial dimension can produce a lost in term of efficiency and effectiveness.

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