

Workshop (Taller Formación e Investigación)
“Spatial statistics with applications in QGIS and Rstudio:
Case studies for Population Data”

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Day	Timing	Programme
February 17, 2025	11.00-11:15	<i>Presentation: Objectives and Structure of the Workshop</i> Alberto del Rey Poveda , University of Salamanca, Spain Miriam Carella , University of Bari Aldo Moro, Italy
	11.15-13:00	<i>Introduction to Spatial Data</i> <i>Online Sources for spatial data</i>
February 18, 2025	10:00-13:00	<i>GIS definition and components</i> <i>Data model in GIS environment: vectors and raster</i> <i>Geoprocessing of vector data</i> <i>File types in GIS</i> <i>An Overview of the Interface: some tools</i>
	15:00-18:00	<i>Creating and Exploring a Basic Map in GIS:</i> <i>Adding the first layers from a .shp file</i> <i>Symbology for single symbol and categorized and graduated</i> <i>Generation and editing of PRINT layout</i> <i>Saving the project</i>
February 19, 2025	10:00-13:00	<i>Create new layers from a .csv file</i> <i>Selection of objects and connection to databases</i> <i>Filtering the elements</i> <i>Editing table/ Filtering the elements/ New fields through query</i> <i>Joining tables</i> <i>Creating centroids from polygons</i> <i>Installation of the first plugins: explore QuickMapService</i>
	15:00-18:00	<i>Case study</i>
February 20, 2025	10:00-13:00	<i>Introduction to the Spatial Analysis</i> <i>Introduction to Rstudio</i>
	15:00-18:00	<i>Exploratory Analysis with Rstudio</i> <i>Descriptive statistics</i> <i>Location maps</i> <i>Histogram, boxplot and qqplot</i> <i>Thematic and Bubble maps</i> <i>Improving maps</i>
February 21, 2025	10:00-13:30	<i>Introduction to the Spatial correlation</i> <i>Structural analysis with Rstudio</i> <i>Computing empirical variogram</i> <i>Fitting a model</i>
	13:30-14:00	<i>Conclusions</i> Miriam Carella , University of Bari Aldo Moro, Italy <i>Spatial analysis: useful tool for population data mining</i> <i>Present Projects</i> <i>Future collaborations</i>

Instructions

Don't forget to bring your laptop and verify your Wifi connection with Eduroam.

Before training, we ask you to:

- download for free and install on your laptop QGIS from this link: <https://qgis.org/download/>
- download for free and install on your laptop R from this link (be careful to properly select your computer processor): <https://cran.r-project.org>
- download for free and install on your laptop Rstudio interface from this link (be careful to properly select your computer processor): <https://posit.co/download/rstudio-desktop/>

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PI : Alberto del Rey Poveda & Rafael Grande

Project PRIN 2022 PNRR *Foreign population and territory: integration processes, demographic imbalances, challenges and opportunities for the social and economic sustainability of the different local contexts (For.Pop.Ter)* (Prot. P2022WNL7)

PI: Federico Benassi (University of Naples Federico II);

AI: Miriam Carella (Responsible for University of Bari Aldo Moro)