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Mafia murders in Palermo (1909-1992)*

NICOLA PONTAROLLO**

European Commission, Joint Research Centre (JRC), Ispra, Italy

ROBERTO RICCIUTI***

University of Verona and CESifo, Italy

The mafia has profoundly marked the history of Sicily, and Palermo has been particularly hit by its murders. The map shows georeferenced information on the murders in Palermo city with data from Caminiti¹ and from the website vittimemafia.it.

To highlight the areas where murders are more concentrated we created a heatmap performing a 2D kernel density estimation with the R package *ggplot2*.²

As it is done on topography, we plot the map using contours, which allow to draw 3D surfaces in 2D. If f is a function of two variables with domain D , then the graph $S(f)$ is the set of all points (x, y, z) in such that $z = f(x, y)$ and (x, y) is in D . This means that we can visualize the graph $S(f)$ as lying directly above or below its domain D in the xy -plane.

The highest density of massacres is indicated by darker red (and higher numbers), and lighter colours (and lower numbers) stand for less concentration.

The map shows that the geographic pattern of the mafia murders has a high concentration in the centre of Palermo, the most vibrant area which corresponds to the geographical heart of the city, with a few isolated murders at the edge of the city. Individuals (such as politicians, entrepreneurs, police officers, judges, etc.) who have fought the criminal culture of the mafia have been mostly killed in the heart of the city.

1 Caminiti 2014.

2 Wilkinson 2005.

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** nicola.pontarollo@ec.europa.eu

*** roberto.riciutti@univr.it

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