

## Assessment of lead pollution in top soils of a southern Italy area

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### Abstract

Exposure to lead (Pb) may affect adversely human health. Mapping soil Pb contents essential to obtain a quantitative estimate of potential risk of Pb contamination. The main aim of this paper was to determine the soil Pb concentrations in the urban and peri-urban area of Cosenza–Rende to map their spatial distribution and assess the probability that soil Pb concentration exceeds a critical threshold that might cause concern for human health. Samples were collected at 149 locations from residual and non-residual topsoil in gardens, parks, flower-beds, and agricultural fields. Fine earth fraction of soil samples was analyzed by X-ray Fluorescence spectrometry. Stochastic images generated by the sequential Gaussian simulation were jointly combined to calculate the probability of exceeding the critical threshold that could be used to delineate the potentially risky areas. Results showed areas in which Pb concentration values were higher to the Italian regulatory values. These polluted areas were quite large and likely, they could create a significant health risk for human beings and vegetation in the near future. The results demonstrated that the proposed approach can be used to study soil contamination to produce geochemical maps, and identify hot-spot areas for soil Pb concentration. The influence of environmental geochemistry on human health is extremely important above all if some heavy metals, such as lead (Pb), appear to cause ill health through either deficiency or toxicity or both (Filippelli et al., 2012, Oliver, 1997). Pb is a purely toxic heavy metal, which induces a wide variety of adverse physiologic effects to humans and is especially harmful to children (Sharma and Pervez, 2003).

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### Biography

IlariaGuagliardi has completed his Studies in University of Calabria, Italy. He worked as professor in department of Biology,

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