

## Geostatistical mapping of gamma dose rate measurements in Europe

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After the nuclear reactor accident in Chernobyl in 1986 most of the European countries established monitoring networks measuring outdoor gamma dose rates. Member States of the European Union and a number of non-EU countries (e.g. Switzerland) participate to the European Radiological Data Exchange Platform (EURDEP). EURDEP is both a standard format for radiological data and a network for the exchange of automatic monitoring data in situations of routine as well as during emergencies. The participation of the EU Member States is regulated by the Council Decision 87/600 and the Recommendation 2000/473/Euratom. The central node of the EURDEP network is the DG-JRC in Ispra, Italy.

Either in case of emergencies, or for different scientific purposes - e.g. gamma dose rate can be used as a proxy since it is related to factors also affecting  $^{222}\text{Rn}$  flux (Schery et al., 1989) and soil moisture such as precipitation (Greenfield, 2002; 2003)– European maps on average background gamma dose rates would be useful to distinguish anomalies (EUR 2005). Since gamma dose rates are measured continuously it allows us to establish seasonal maps which are closely related to soil moisture contents and  $^{222}\text{Rn}$  exhalation rates. Within the framework of this work geostatistical prediction and simulation methods have been used to quantify spatial and temporal patterns to establish a gamma dose rate map for Europe.

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