



## **Gamma Detectors for Continuous Monitoring of Radon**

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*Received July 18, 2013; Accepted October 08, 2013*

**Abstract:** The present paper describes the development of a new approach for continuous measurement of Radon emissions from the subsoil, based on gamma detection of its decay products. The new sensor devices are placed in a closed 7 cm-thick lead box, 3-4 meters underground surface, without air ventilation. Measurements with new gamma detectors have been systematically tested in the Abruzzi region (Central Italy), for continuous monitoring of radon activity, starting from 2002 until today. The described methodology shows a stabile reduction in the background radioactivity, as the integral background radioactivity was significantly reduced by a factor of six in the interested energy window of 250-700 KeV. The effects on Radon emissions of seasonal and daily changes in atmospheric parameters, such as the air temperature, were analyzed.

**Keywords:** *Radon, Gamma Detector, Gamma Suppression, Long-Term Radon Measurements, Short-Term Radon Measurements*

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