

## Human health risk estimation from indoor radon measurements

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The indoor radon concentration level have been monitored in selected locations of four European countries (Iceland, Italy, Norway and Sweeden) during an yearlong measurement campaign using time integrated passive radon dosimeters containing CR-39 track detectors. The measurements were carried out in private houses and public buildings like schools for an exposure time of up to 6 months of each detector. Experimental data show a great variation between different geographic areas, and often the average levels is over the acceptable radon limit of 300 Bq/m<sup>3</sup> recommended by International Commission on Radiological Protection (ICRP). To investigate a relationship between indoor radon exposure and lung cancer, estimating cumulative levels of exposure to indoor radon for an individual or population is necessary. We analyze the datasets and investigate the factors influencing indoor radon concentrations in order to determine the optimum use of the experimental information: the results show that the variables associated with indoor radon levels were strictly linked to the soil geology. Analyzing the datasets enables improved assessment of radon exposure in a given area. The average absorpction effective dose equivalent for a person is computed and the risk of lung cancer per year is evaluated.