



DOSIMETRY FOR ENVIRONMENTAL RADON TERRADEX EXPERIMENT

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The dosimetry of gases like radon and thoron (^{222}Rn and ^{220}Rn) is important in several fields of general interest such as radioprotection uranium mines environmental health house construction geophysical research medical therapy (i.e. radon baths) background measurements for experiments that study exotic processes study of seismic events, since ^{222}Rn is released in soil cavities prior to the earthquake and radiometric dating of materials

In this work we will present the Terradex project which is a system capable to perform accurate measurements of ^{219}Rn ^{222}Rn and ^{220}Rn (produced by the decay chains of ^{235}U ^{238}U and ^{232}Th respectively) gases concentration in air water or other fluid. The instrument is based on silicon microstrip detectors inserted in a cylindrical fiducial volume connected to the front end data acquisition electronics and to a pneumatic system providing high vacuum. The experimental apparatus data acquisition system details of calibration procedures and of data analysis will also be discussed.

Keyword Radon, Silicon Detectors, Data Acquisition, Radioprotection, Radiation