

MEASUREMENT OF ALPHA ACTIVITY CONCENTRATION IN THE
GROUND AIR USING COLLULOSE NITRATE NUCLEAR TRACK DETECTORS

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ABSTRACT

A study on the measurement of alpha activity in the ground air has been carried out using CA 80-15 and LR 115-1 cellulose nitrate nuclear track detectors. The detection efficiencies of the detectors were determined by making use of an ^{241}Am alpha source of 0.1 uC in activity.

For field measurement of alpha activity of emanated radon and its progeny in the ground air, two different radon cups were installed for a certain period of time in two neighbouring ground holes of about 15 cm in diameter and 45 cm in depth. Of the two radon cups, one was kept closed space during the detecting period, while the other kept partly open space with a hole enabling the inner air to ventilate.

With the data evaluated in terms of alpha activity per unit volume of the air, detection efficiencies of the two different type of detectors and track recording characteristics in the two different cup circumstances were examined and discussed comparatively.