



Relation among indoor radon concentration, fault systems and volcanic activity in the etnean area

A. Brogna (1,2), G. Immè (1), S. La Delfa (3,4), V. La Monaca (1,2), S. Lo Nigro (1,2), D. Morelli (1), G. Patanè (3), G. Trincali (4)

(1) Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia, 64 I-95123 Catania, Italy, (2) CSFNSM, Via S. Sofia, 64 I-95123 Catania, Italy, (3) Dipartimento di Scienze Geologiche, Università di Catania, Corso Italia, 56 I-95129 Catania, Italy, (4) IRMA-OMEGA, via Paolo Vasta, 158/c, Acireale, Italy.

Indoor radon concentration studies have been performed in the etnean area. In particular in the eastern flank of Mt. Etna, where, soil radon investigation, using a continuous measurements device, has also been performed to characterize the volcano dynamics.

The aim of this work was to evaluate the effects of fault systems and volcanic activity on indoor radon concentration values.

Indoor radon measurements were performed by means of active detection systems and charcoal canisters. The choice of the charcoal canisters technique has let us to have information on radon concentration in a short integration time and to have continuous measurements changing the canister every two days for each place. Measurements have been performed continuously for several mouths.

The obtained results show, that higher values of radon concentration are measured in dwelling build in correspondence of geological structures as fault and fractures; these tectonic disturbance in the Earth's crust can be considered preferential ways for the radon's surfacing and could favour the indoor accumulation. High values are also recorded during magma uprising, which effects are clearly visible on in soil radon concentration variations.