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Proposal of an affordable method to estimate indoor thoron concentration close to the walls using active radon monitors

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Several continuous radon monitors (CRM) are also sensitive to thoron. This phenomenon, called thoron interference, could lead to overestimate the actual indoor radon concentrations and it is considered an issue for some CRMs, especially for those not able to perform alpha spectrometry of radon daughters. For this reason, radon measurement protocols generally recommend to deploy such CRMs not close to the walls in presence of building materials for which thoron exhalation is expected to be high.
However, thoron interference of CRMs could be used as a mean to detect thoron itself in an affordable way. In this work, we propose a simple indirect method to detect thoron concentration close to the walls using two types of inexpensive CRMs available on the market. For each of these CMRs, firstly we have estimated their thoron interference in an indoor environment having tuff as building materials, i.e. with a not negligible indoor thoron concentration close to the walls. Afterwards, we have estimated their thoron sensitivity using a professional monitor as active thoron reference instrument.

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