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Recent progress in the traceRadon project: Measuring outdoor Radon down to lowest activity concentrations

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The alpha-decay chain of Rn-222 results to the highest dose contribution from natural radiation and by this exposure to the highest natural risk for developing lung cancer. Therefore, precise and quality assured measurements of radon are of great importance and EU member states are required to implement radon mitigation measures according to the European Council Directive 2013/59/EURATOM.
The outdoor Rn-222 activity concentration (typically in the range of 1 Bq/m³ to 100 Bq/m³) can be used to improve the identification of radon priority areas, where countermeasures are most needed. Despite an enlarging network of Rn-222 activity concentration measurements across Europe, traceability to SI at the outdoor level is still lacking.
The EMPIR project 19ENV01 traceRadon [1] addressed this issue and has developed several new radon emanation sources, to be used as calibration standards to calibrate reference instruments at the environmental level with uncertainties below 10 % for $k = 1$.
In this talk the radon emanation sources as well as their suitability for implementation as calibration standards will be presented.
[1]: This project 19ENV01 trace Radon has received funding from the EMPIR programme co-financed by the participating States and from the European Union's Horizon 2020 research and innovation programme.

Category

Other

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