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Reliable radon flux observations for supporting Radiation Protection and GreenHouse Gase reduction strategies

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The noble and radioactive gas radon is well known to be the most important source of public exposure to natural environmental radioactivity in indoor environments (workplaces, homes, etc.). Consequently, it is important to identify radon-prone areas, where radon fluxes are high, and also to develop and apply mitigation measures when radon activity concentrations of indoor areas exceed guideline values.

However, radon is also known by the climate and atmospheric research communities to be a useful environmental tracer and it is nowadays being used in several studies such as the improvement of atmospheric transport models or the indirect estimation of GHG fluxes by the Radon Tracer Method. These previous applications will benefit from the availability of radon flux maps.

Stakeholders and scientists involved in radiation protection and climate analysis may benefit from reliable continuous radon flux measurements to validate and improve existing and future radon flux maps. In the framework of the project traceRadon (EMPIR reference 19ENV01) a full metrology chain has been designed and built for radon flux measurements.

The work and the challenges related to this type of measurement will be presented here together with possible guidelines for carrying out continuous radon flux measurements in the field.