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Early results of experimental 222Rn flux campaign carried out at a mountain Spanish region and comparison with available radon flux inventories results

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The atmospheric concentrations of components impacting the greenhouse effect (CO_2, CH4, N2O, O_3, and aerosols) have increased significantly in the last two centuries, leading to a direct impact on our climate. These climatic changes deeply affect the geochemistry and the dynamics of the main reservoirs such as the atmosphere, the ocean, and the biosphere. Therefore, reductions of the emissions are needed for all four of the most important anthropogenic GHGs: CO_2, CH4, N2O and SF6.

Particularly, the relative contribution of human induced CH4 in the atmosphere to the total human direct greenhouse effect is about 25
Nowadays, the study and attribution of categories for GHGs sources is carried out by using bottom-up inventories and top-down techniques. The atmospheric concentrations and the fluxes of the noble and radioactive 222Rn gas are widely used for retriving indirectly GHGs fluxes, improving top-down techniques and analysing different type of sources.

In the frame of the "Methane exchange between soil and atmosphere over the Iberian Peninsula" (MIP) project (Reference: CGL2013-46186-R, Spanish Ministry of Economy and Competitiveness) four experimental radon flux campaigns are carried out at mountain as well as at coastal Spanish regions using integrated and continuous monitors. The early results of first radon flux campaign carried out at the Gredos and Iruelas climate station (GIC3) of the Catalan Institute of Climate Science (IC3) are presented and compared with available radon flux inventories maps.