



Contribution ID: 68

Type: **Talk**

# Radon daughter deposition modelling and measurement

*Thursday, 3 October 2024 10:20 (20 minutes)*

This work summarizes different approaches that were carried out in the Modane Underground Laboratory (LSM). In this work the simulation of Radon daughter implantation on different surfaces is presented. The work compares a Geant4 based approach to the SRIM code. This lies in the simulation of the nuclear recoil on a metal plate. The different materials are tested respectively to radon deposition. Mainly we try to simulate accurately the nuclear recoil and the different surface states that will govern the implantation depth. Moreover different materials were tested in radon deposition chamber that allowed us to test different environmental possibilities. The main material and packing are tested and the accuracy of simulation is tested. In the conclusion a discussion is made to check if this simulation can be generalized to underground experiment and the surface lead 210 deposition background contribution coming from the storage of materials before building the experiment. This work could be discussed as a possibility to anticipate the background coming by monitoring the radon level or giving a radon budget for the experiment building and anticipate the lead 210 contribution.

**Primary author:** DASTGHEIBI FARD, Ali (CNRS/LPSC\_LMS (FR))

**Presenter:** DASTGHEIBI FARD, Ali (CNRS/LPSC\_LMS (FR))

**Session Classification:** Rn Detection and Mitigation