Thesis Proposal for the Master's Degree in Physics

Title: Determination of Cs-137 radioactive contamination in soil and food

Abstract (max 10 lines):
Cesium-137 (Cs-137) is a radioactive contaminant of significant environmental and public health concern due to its long half-life and persistence as a byproduct of nuclear fission, notably from incidents such as the Chernobyl disaster (1986) and the Fukushima incident (2011). Cs-137 contamination remains widespread, affecting soil, ecosystems, and food safety across large areas of Europe. Cs-137 acts as a historical marker of nuclear activities, enabling the tracking of contamination spread and aiding in the assessment of its impact on agriculture, the environment and the food chain safety. This thesis aims to quantify Cs-137 levels in contaminated soil and food sources, emphasizing the need for monitoring due to Cs-137's gamma emissions and potential health risks to humans and wildlife. Advanced detection techniques will be applied to enhance the accuracy of measurements in the study.

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Laboratory where the thesis is carried out: Laboratory of Particle Physics

Any participating external structures: ARPACAL, Ettore Majorana Physics Laboratory

Type of thesis:
☐ compilation
☒ research:
specify if ☒ experimental ☐ theoretical or ☐ data analysis