



Politecnico
di Bari

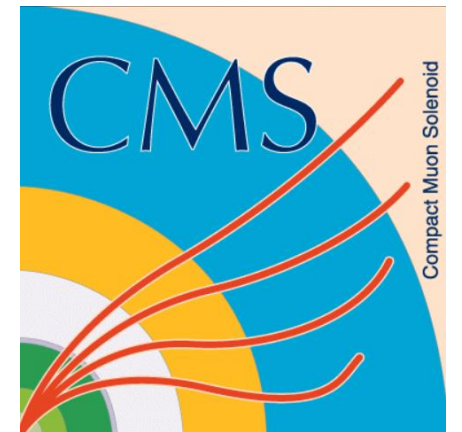


Simulation of GIF++

Nicola Ferrara, INFN and Polytecnic of Bari

DRD1 WG4 First technical meeting

13/02/2024



Short presentation

Phd Student from Bari, good knowledge of C++, **Geant4** simulation

Involved in RPC group in Bari with Iaselli and Pugliese G., simulation and testing

Project of simulation of GIF++ with a filter implementation and soon detector inside

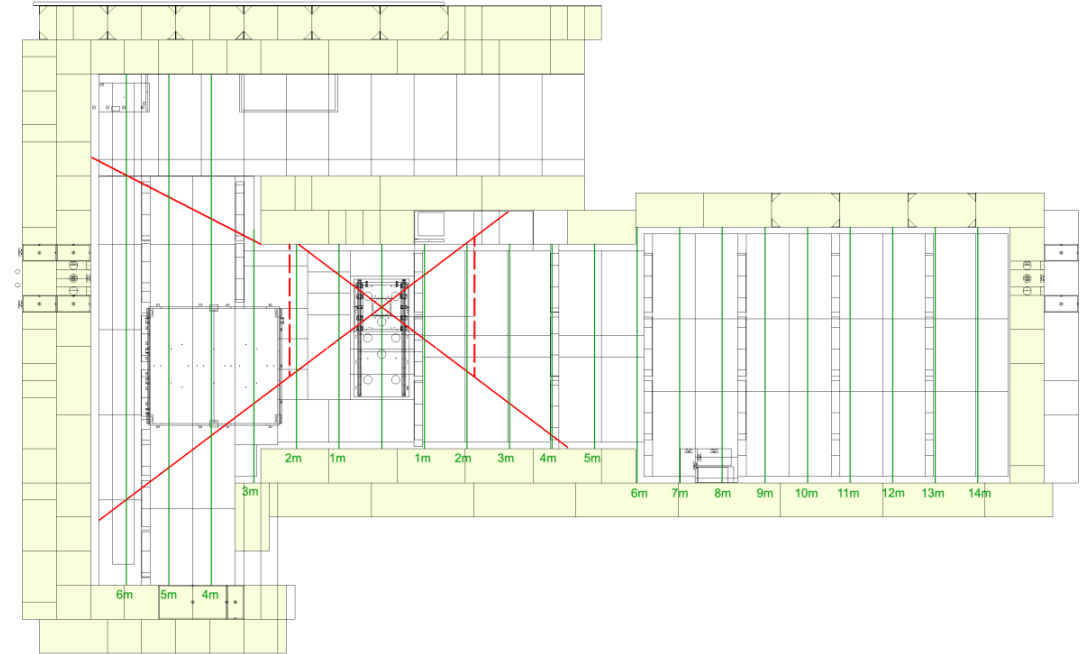
As an outlook I would appreciate if someone is interest in a **Simulation as a Service platform. Which kind of request?**

Study of the dose and flux vs. distance and ABS

In each point a sensitive volume of Air was considered for Dose and Flux estimation

Source of ^{137}Cs activity was considered of 12,5 TBq

No detectors, no mechanical supports were simulated yet-> **need a set-up for a real detector simulation**



Dose rate analysis

- Validation for position at 6 m apart from source in UPSTREAM
- Upstream analysis: simulation in air **without detectors inside GIF++ bunker**
- Slightly discrepancies at lower ABS probably due to simulation setup, probably due to dose in air calculation?

Next steps

1. Simulation of different detectors installed inside the GIF
2. Deeply study with different ABS **upstream and downstream**
3. Analysis of influence of **backscattering** between UpABS and DownABS
4. Extensive dose campaign of measurements for further validation

