Ongoing work and some points to trigger the discussion

About DAMIC-M Geant4

OPTIMISATION FOR SHIELDING SIMULATIONS : very time consuming (e.g. external gamma and neutrons for LBC). Ongoing, not discussed in this school.

AUTOMATIC DETECTOR GEOMETRY FROM CAD : never ending story

VALIDATION SUBTASK :

- **Geant4 / MCNP comparison**, and possibly validation with data (see Carly's talk)

- we have experienced bugs in some Geant4 versions (e.g. Pb210 sims)

- **ACTION 1 : Collect references plots** to compare with each time we do major software modifications or we modify the Geant4 version. **Contribution from everybody is welcome!**

- **ACTION 2 : setup the CI/CD in gitlab** for automatic checks.

Perform this test independently if you don't use gitlab for your temporary version or if you change G4 version on your local computer.

- **ACTION 3 :** On the long term: indicate new validated plots (from physics or data) and report strange results which may point out to new bugs

About WADERS Framework

- **Main goal : a modular framework for many applications and different contributors**

  - Many features and current applications shown in details by Nuria
  - Any other things we can include / consider ?
  - Do you have specific codes for analysis ? Is it something that can be integrated?

So far : code / analyses of general interest for DAMIC-M.
DAMIC approach for image processing, but we wont replicate everything (e.g. LL fit)

- Any specific request or hint for LBC?
- Integration with background analyses (similar to DAMIC@SNOLAB approach?)

About Data format

ROOT/ python

- ROOT : integration in Geant4
- Python : WADERS
- ROOT / Python : for personal codes, we don't oblige people to use one or the others.

Output file format

Geant4 : ROOT format!

WADERS (High level variables) : .root (read by ROOT and pyroot package)

WADERS (images) : pickle in Nuria's slide but fits format will be implemented for backward compatibility.

In any case WADERS should read and produce images in the same format of real data

General ?

Any other point to discuss, comments, suggestions ?

Possible contributors?

Concerns or difficulties concerning working in this framework or sharing codes?