Zoom, 11-13 Jan 2021 (online school)

Welcome to the 1st DAMIC-M software school

Organizers :

Nuria Castello-Mor, Claudia De Dominicis, <u>Mariangela Settimo</u>

Indico page : <u>https://indico.in2p3.fr/event/22866/</u>









Motivations and Goals

We have developed in the last ~2 years a code for DAMIC-M simulations based on Geant4 and a framework for simulation and signal processing that are quite stable.

- The codes capitalised on the DAMIC experience, using some validated features and improving some others (geometry design, output format, strategy for simulation processing,..)

- The analysis framework can be extended with new applications (e.g., signal processing).

More and more collaborators are looking at simulations and analyses. We want to encourage people to :

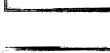
- Be aware of the code already available
- use a common framework (more users = more validations and feedbacks)
- avoid people to restart from scratch (save time, avoid same errors, share knowledge)
- contribute to improve the software, add new features for the benefit of the collaboration and the experiment

Tools and covered topics

- Geant4 based simulation code (C++/root)
- General Analysis Framework (python): process the G4 simulations to produce images and some basic observables, and process signal/data from test benches

Tools :

- <u>gitlab.in2p3.fr</u> repository for software centralisation, cooperative work and version control (ask your task leader or MS for invitation)
 - also offer a wiki page, allow to define issues, milestones, assign people to tasks etc.
- Mailing list : <u>DAMICM-ANALYSIS-L.in2p3.fr</u>, subscribe on <u>listserv.in2p3.fr/</u> or send an email to your task leaders.
- Slack room (e.g., #damicm-sims, but almost all task have a dedicated room)
- A computing cluster (CCIN2P3) accessible to everybody, with maintained software



DAY2

DAY





Additional notes

- The talks are meant for software users: unfortunately there is not enough time to go in the details (e.g. for application development in Geant4 or to learn python)!

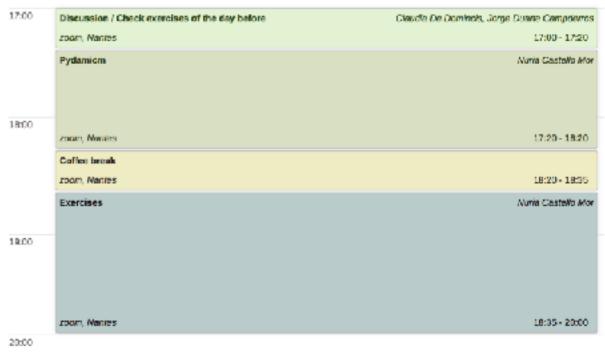
- We suggest to use the account in CCIN2P3 (the needed dependencies are installed : ROOT, Python, Geant4, git, cmake) but you can also use your personal computer or local cluster.
- For each topic we have an **INTRODUCTION FOLLOWED BY EXERCISES.**
- Sessions will be recorded and be available online after the school, together with the presentations and the exercises.
- We encourage people, especially students, to do some more tests by their own after the sessions.
- Each day we allocated 30 min to discuss possible problems encountered with the exercises of the previous day. don't hesitate to use this time and the slack chat !
- The 3rd day is dedicated to more advanced exercises and to an open discussion on future developments: share your ideas, your needs, and possible contributions!
- Another school may be planned in about 1 year : we are confident more and more functionalities will be developed in the coming months and more people will be involved in analyses tasks

Agenda

Mon 11/01: Gitlab + Geant4 simulation code

17:00	Introduction	Marlange/a Sattimo
	zoon, Nanes	17:00 - 17:10
	Citlab: Citlab	Jarge Gwate Campulanas
	zoare, Mentes	17:10 - 17:30
	Exercises: git ab: access, clone, commit,	Jorge Duarte Campdavos
	zoare, Nantos	17:30 - 17:50
18.00	DANICM Geants simulations	Claudia De Dominsia
	zoam, Natins	17:50 - 18:45
	Coffee Break	
	20069, Mastes	1848 - 1900
19:00	Exercises: Download, complie, interactive run	Clauda De Dominsis
	zoare, Natina	19:00 - 20:05
20:00	A START, MARINA	2002 - 2010

Tue 12/01: Analysis framework



Wed 13/01: GitLab Advanced, Analysis framework discussions

Discussion I Check according of the day before	
Discussion / Check exercises of the day before	Nuria Castello Mor
zoom, Nantes	17:00 - 17:20
Gidab: Advanced exercises	Jorge Duarte Campderros
zoom, Nantas	17.20 - 18:00
Future developments	Mariangela Settino, Nucia Castelo Mar
zoom, Nantes	18:00 - 19:20
Conclusion	Marlangola Senimo
200m, Names	1920 - 1935
	Gitiab: Advanced exercises zoom, Nankos Puture developments zoom, Nankes Conclusion

Thanks to the speakers! (Jordi, Claudia, Nuria)