



# Users community engagement

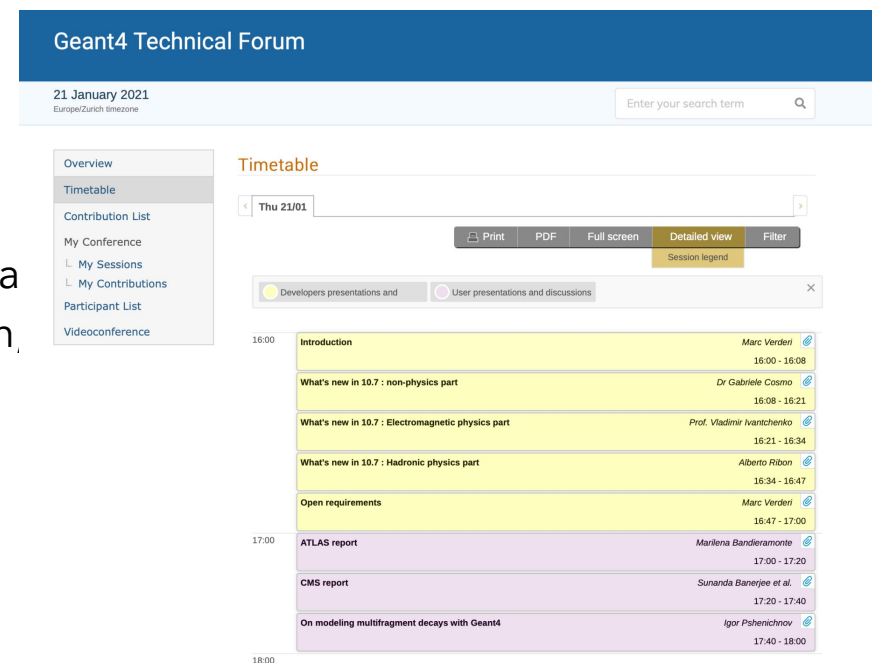
26th Geant4 Collaboration Meeting  
24th September 2021



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(University of Pittsburgh)  
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(University of Warwick)



- What: The G4 Technical Forum is the main opportunity for users to give inputs and express requests and requirements to the Geant4 collaboration
  - basic functionalities, technical issues, performances, user support or other Geant4-user related aspects.
- When: 2-3 times per year:
  - *December-January*: To present the new Geant4 release
  - *March*: To present the work-plan of the year for the next Geant4 release
  - *September*: during the Geant4 Collaboration meeting (when not virtual)
- Who: all the Geant4 users communities (HEP, Medical, Space and Radiation, Technology Transfer)
- How:
  - Format: 3 hours - one afternoon
    - 1 hour for developers + 2 hours for users
  - Minutes: shared on the Geant4 web page
  - Live recordings: available at the Indico page since the last edition



The screenshot shows the Indico interface for the Geant4 Technical Forum on 21 January 2021. The page has a blue header with the event title. Below the header, there's a search bar and a sidebar with navigation links: Overview, Timetable, Contribution List, My Conference, My Sessions, My Contributions, Participant List, and Videoconference. The main content area displays a timetable for Thursday, 21/01. The timetable is divided into two sections: 'Developers presentations and discussions' (yellow background) and 'User presentations and discussions' (purple background). The yellow section includes an Introduction by Marc Verdet, followed by three 'What's new in 10.7' reports (non-physics, Electromagnetic physics, and Hadronic physics) by Dr. Gabriele Cosmo, Prof. Vladimir Ivantchenko, and Alberto Ribon respectively, and an 'Open requirements' session by Marc Verdet. The purple section includes an ATLAS report by Marlina Banderamonte, a CMS report by Sunanda Banerjee et al., and a report on modeling multifragment decays with Geant4 by Igor Pshenichnov. Each session is listed with its start and end times.

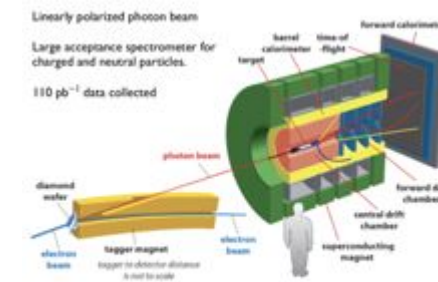
<https://indico.cern.ch/event/985252/>

# Participation over the past years

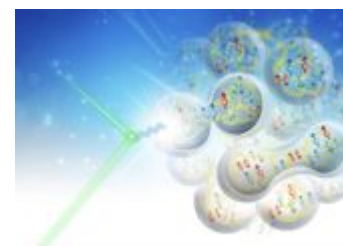
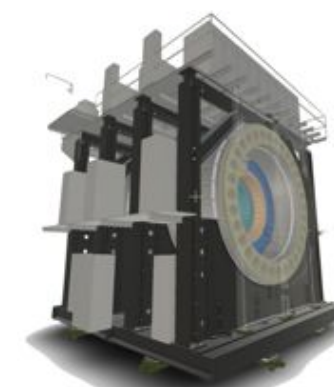
- The Forum is well attended: usually ~20-30 persons (we can do better!)
- Mainly from LHC experiments
  - Each experiment has a direct contact with a Geant4 expert (weekly contact)
  - Nevertheless the TF is a good occasion to
    - i. learn about new Geant4 features/planning
    - ii. expose wider problems/ideas/issues
    - iii. talk with most of the Geant4 experts, in one "place"
- Scarce participation from other user communities (dedicated technical forum)

# Participation over the past years

- Reports from the major LHC experiments: ALICE, ATLAS, CMS, LHCb
- But also (partial list of the last 3 years):
  - CCFE contribution to G4/GV - UK (2018)
  - Modeling dust clouds in Geant4 - NK Labs, LLC Cambridge, MA, USA (2019)
  - GEMC - GEant4 MonteCarlo and CLAS12 detector (2019)
  - Geant4 and GlueX - Jefferson Lab (2019)
  - sPHENIX - Jefferson Lab (2019)
  - Electron-Ion Collider - Jefferson Lab (2019)
  - Geant4 in LArTPC simulation - FNAL (2020)
  - "pyg4ometry" to load/manipulate/save/visualise/convert GDML/Fluka/CAD geometry - Royal Holloway University of London (2020)
  - Tetrahedral mesh navigator - Hanyang University (2020)
  - PREXII Experiment - Radiation Control (2019) - Jefferson Lab
  - QSS particle tracking simulation for HEP- University of Buenos Aires (2021)
  - On modeling multifragment decays with Geant4 (2021) - INR RAS, Moscow and MIPT, Dolgoprudny



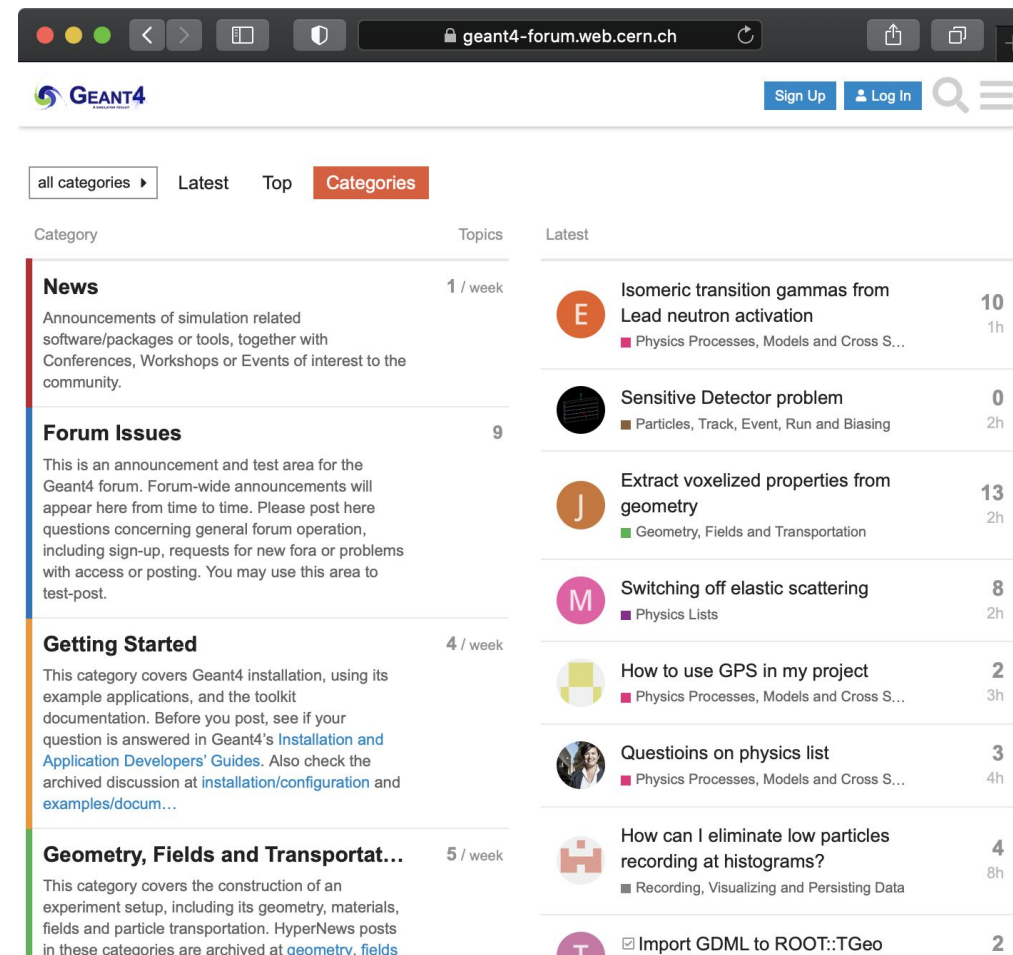
GlueX at Jefferson Lab



# Some thoughts

- How can we engage more our users?
  - The Forum is announced through a mailing list and on the Geant4 website
  - Other means? Direct contact with representatives of each community?
  - Social media? I know there is a Twitter Geant4 account, is it an official one?  
Maybe engage some of the younger G4 members?
  - NOTE: Ok to be proactive, but remember that we first have to make "happy" our existing users
- How can we increase the user interest and participation?
  - Maybe have one dedicated forum for each community would be more effective
  - Avoid being too generic, encouraging interactions/comments
  - Open call for volunteering coding?
    - Call for features development/bug fixes or call for ideas
    - Share success stories from other users.

- What: A [Discourse](#) web forum for users to post questions about use of, or to give feedback on, Geant4
  - Replaced HyperNews system
  - [Full PaaS support from CERN IT](#)
  - “Categories” largely follow those on HyperNews, covering specific topics or areas of the toolkit
  - *This Week*: Request to add dedicated categories for Space and Medical (inc. Biology/DNA?) Communities
- Sign up is “open” but must be approved by admins (currently SB members)
  - Trying to encourage users to use full names. Most don’t use their work email so difficult to form picture of location/use environment.
- About 1700 user accounts, but...



The screenshot shows the Geant4 Discourse forum interface. The browser address bar displays `geant4-forum.web.cern.ch`. The forum header includes the Geant4 logo, a search icon, and links for 'Sign Up' and 'Log In'. Below the header, there are tabs for 'all categories', 'Latest', 'Top', and 'Categories'. The main content area is divided into two columns: 'Category' and 'Latest'.

**Category Column:**

- News** (1 / week): Announcements of simulation related software/packages or tools, together with Conferences, Workshops or Events of interest to the community.
- Forum Issues** (9): This is an announcement and test area for the Geant4 forum. Forum-wide announcements will appear here from time to time. Please post here questions concerning general forum operation, including sign-up, requests for new fora or problems with access or posting. You may use this area to test-post.
- Getting Started** (4 / week): This category covers Geant4 installation, using its example applications, and the toolkit documentation. Before you post, see if your question is answered in Geant4's [Installation and Application Developers' Guides](#). Also check the archived discussion at [installation/configuration](#) and [examples/docum...](#)
- Geometry, Fields and Transportat...** (5 / week): This category covers the construction of an experiment setup, including its geometry, materials, fields and particle transportation. HyperNews posts in these categories are archived at [geometry](#), [fields](#)

**Latest Column:**

- Isomeric transition gammas from Lead neutron activation** (10 1h): Physics Processes, Models and Cross S...
- Sensitive Detector problem** (0 2h): Particles, Track, Event, Run and Biasing
- Extract voxelized properties from geometry** (13 2h): Geometry, Fields and Transportation
- Switching off elastic scattering** (8 2h): Physics Lists
- How to use GPS in my project** (2 3h): Physics Processes, Models and Cross S...
- Questions on physics list** (3 4h): Physics Processes, Models and Cross S...
- How can I eliminate low particles recording at histograms?** (4 8h): Recording, Visualizing and Persisting Data
- Import GDML to ROOT::TGeo** (2)



# Participation over last year

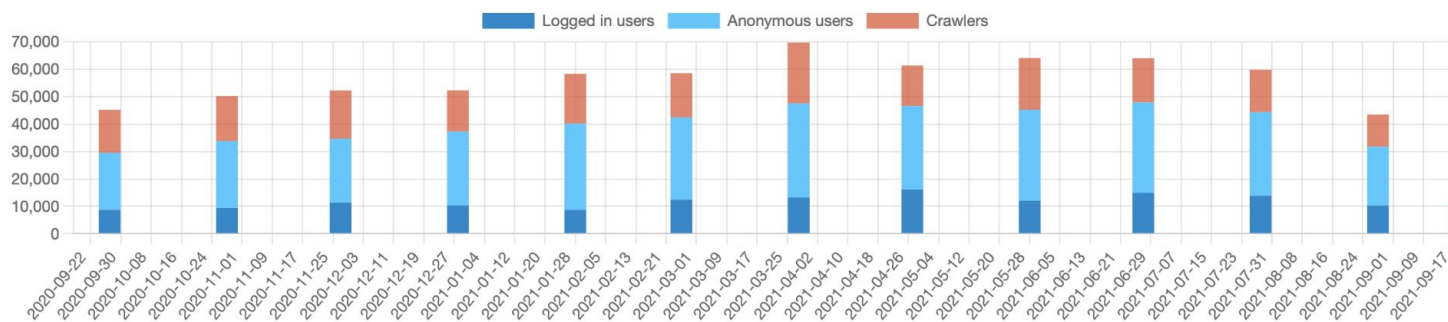
- Page views probably not a great metric: lots of crawlers/bots in "Anonymous"
- Better to focus on Topics and Posts
- Shows it's pretty active, and generally have good response/discussion on new topics
- Can also see fairly steady stream of new users in "New Contributors"
- Daily Engagement average light



## Community health

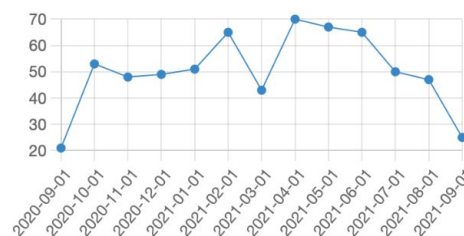
Year SEP 22, 2020 - SEP 22, 2021

### Consolidated Pageviews ?



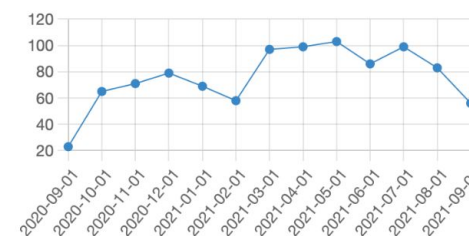
### Signups ?

654 ▼



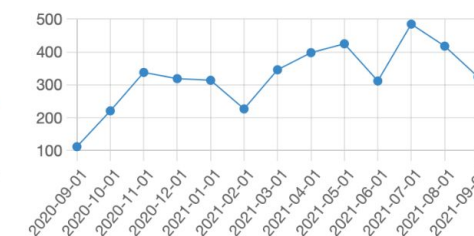
### Topics ?

988 ▲



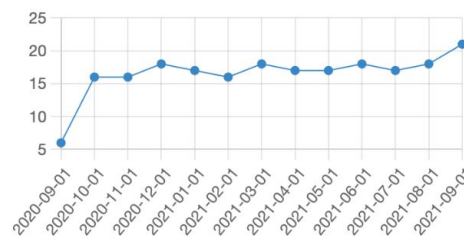
### Posts ?

4.2k ▲



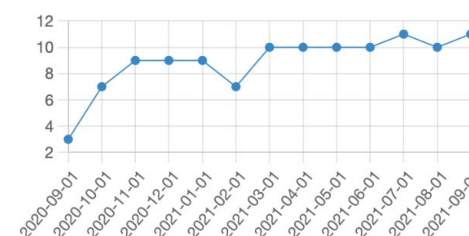
### DAU/MAU ?

18%



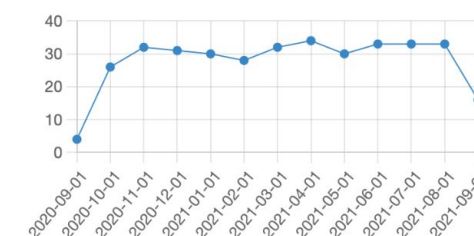
### Daily Engaged Users ?

10 ▲



### New Contributors ?

362 ▼



# Building the Community

- Good input from the collaboration to questions - please keep it up and get involved in helping users if you haven't already!
  - It's on all of us to help users
- Not clear how to (or even if) we can engage/encourage experienced users to help as well - thoughts/ideas welcome
- Do want to give special thanks to Mike Kelsey and Daniel Weller here!











All Time ▼

Last Updated: Sep 22, 2021 10:30 am

1706 users

all groups ▼



Username	Received	Given	Topics Created	Replies Posted	Topics Viewed	Posts Read	Days Visited	Tin Re
 <b>mkelsey</b> Michael Kelsey	97	6	27	527	2.1k	8.0k	710	3c
 <b>allison</b> John Allison	39	0	1	396	250	772	315	1c
 <b>bmorgan</b> Benjamin Morgan	28	17	0	321	636	1.9k	169	1c
 <b>civanch</b> Vladimir Ivantchenko	21	0	0	300	421	1.1k	168	1c
 <b>maire</b> Michel Maire	48	0	2	277	416	1.3k	448	1c
 <b>faca87</b> fausto casaburo	3	2	50	244	192	720	248	2c
 <b>weller</b>	23	8	14	174	925	3.8k	259	2c
 <b>dsawkey</b> Daren Sawkey	11	0	0	134	225	1.0k	134	1c
 <b>anna</b> Anna Zaborowska	10	0	0	119	370	1.3k	174	2c
 <b>guatelli</b>	27	6	0	117	266	676	102	1c



# Thoughts on Common Issues

- Still a lot of questions on installing
  - All we can do here is to ensure binary packages (rpm/deb/conda etc) are available and documented for basic users
- Many questions can be answered by pointing to an existing example
  - How can we make these more visible and topics they illustrate? Could the new website help with "advertising"?
- Often need to tease out "what Geant4/OS version"
  - Provide a post template that requires this info?
  - Should we even provide support for "old" versions (other than to help upgrade)?
- Monday highlighted "hard/need application" feedback.
  - Our documentation is good! Providing, or pointing to existing, training is all we can do. E.g. not our task to teach C++, but we can point to courses, e.g. HSF. Could think about a "software carpentry" that walks through writing an example?
- Geant4Py could also help here, but is in desperate need of effort to update, maintain and support long term.

## All reports | Trending Search Terms ?

▲ Term	▲ Searches
gdml	123
python	119
gps	115
neutron	109
dicom	103
cross section	92
root	87
install	82
cry	79
biasing	77

# Thanks for your attention.

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# Backup slides

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