

P5 Town Hall Meeting



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Type: **Not Early Career Scientist**

On Sustaining Geant4

Abstract

The talk offers a perspective on the most widely used HEP simulation tool, i.e., Geant4, and related challenges faced by US HEP community and Geant4 Collaboration, especially the ones related to the Geant4 physics models and the lack of personnel.

It centers on a quote from (the Snowmass2021 Book) Rare Processes and Precision Measurements Frontier (RPF) p538-539:

- The RPF wants to send a strong and emphatic message, also discussed in the Computing Frontier report: **GEANT4 is not sufficiently supported in the U.S.** The physics models of some crucial processes, including but not limited to their cross-sections, rates, and spectra, are in disrepair [...] Many experiments in RPF rely on low-energy phenomena whose simulations are not kept up to date; when bugs and errors are found, they are **not fixed because there is no one to fix them.** GEANT is infrastructure akin to “roads and bridges”; *the current trajectory endangers progress across particle physics.*

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