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ROOT: Taking stock of the Run 3 experience towards ROOT7

Tuesday 6 May 2025 09:00 (30 minutes)

ROOT is a unified software package for the storage, processing, and analysis of scientific data: from its acquisition to the final visualization in the form of highly customizable, publication-ready plots. Successfully used by experiments and thousands of physicists, the ROOT Project is preparing its seventh release cycle, sustained by intense R&D activities.

In this contribution, after briefly reviewing the status of the project, we'll focus on the results harvested along the R&D activities conducted so far and how those will shape the future of ROOT. The areas on which we'll concentrate will mainly be three. Firstly, we discuss how hardware accelerators can be exploited by users with ROOT and how these new features are relevant at present and future Analysis Facilities. Then, we review the current development status of RNTuple and its adoption by experiments, illustrating both advancements in terms of performance but also usability, in C++ and Python. Finally, we'll concentrate on the Python-C++ integration, at a low level, and the recent advancements in the interoperability of ROOT and Scientific Python, at the user-facing level.

Requested talk length

20

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