Contribution ID: **260**   Type: **Oral**

The New ROOT Interface: Jupyter Notebooks

Monday 10 October 2016 15:00 (15 minutes)

Notebooks represent an exciting new approach that will considerably facilitate collaborative physics analysis. They are a modern and widely-adopted tool to express computational narratives comprising, among other elements, rich text, code and data visualisations. Several notebook flavours exist, although one of them has been particularly successful: the Jupyter open source project.

In this contribution we demonstrate how the ROOT framework is integrated with the Jupyter technology, reviewing features such as an unprecedented integration of Python and C++ languages and interactive data visualisation with JavaScript ROOT. In this context, we show the potential of the complete interoperability of ROOT with other analysis ecosystems such as SciPy.

We discuss through examples and use-cases how the notebook approach boosts the productivity of physicists, engineers and non-coding lab scientists. Opportunities in the field of outreach, education and open-data initiatives are also reviewed.

Tertiary Keyword (Optional)

Outreach

Secondary Keyword (Optional)

Visualization

Primary Keyword (Mandatory)

Analysis tools and techniques

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Session Classification: Track 5: Software Development

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