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Jupyter Notebooks for Science (ROOT as a Service)

Tuesday, August 30, 2016 1:00 PM (5 hours)

The objective of the exercises is to give to show the participants how to be even more productive in they everyday tasks thanks to Jupyter notebooks. During this hands on session the concepts treated during the front lesson are seen in action.

At the beginning the opportunities given by the notebooks and the Jupyter web interface are reviewed. Elements of the several keyword shortcuts and web user interface management are tried out.
The usage of markdown cells, code cells, the way to manage the output and notebooks' conversion to various formats such as HTML or pdf is illustrated.

Once the basics are addressed, we focus on Python and C++ notebooks, starting from selected examples coming from High Energy Physics such as CMS Opendata or Large Hadron Collider machine studies. Libraries like ROOT, Matplotlib and Pandas are used. Particular attention is dedicated to machine learning activities.

Finally the interplay of Python and C++ made possible by the ROOT Python bindings, PyROOT, is illustrated by examples.

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