Laboratoire des 2 Infinis – Toulouse

J. Stark

ATLAS France CAF-user meeting
9 December 2021

Team

Composition of the team

2 CNRS, 2 IT (1.3 FTE in 2021), 1 PhD, 1 PD
waiting for reply on our application for CPJ

HH -> bbγγ (Higgs self coupling) ;
for starters: search for SH in full Run 2
continuity of X -> HH [thèse R. Hulsken]
with CPPM
BDT (CERN Yellow Report) -> MEM

Involvement of the team in computing

None

Involvement of the team in software

Track reconstruction for ITk
using ML and Kalman-based methods, comparison of the two approaches

ATLAS institutional commitments being defined: contribution to ITk SW infrastructure

Computing resources in 2021-2022

No servers at the lab. Wish to keep it that way in the foreseeable future.

We rely on the CC-IN2P3 services;
a huge thank you to our colleagues at CC !

Analyses performed entirely at CC-IN2P3 (local batch).

If some needs, not covered by CC-IN2P3 offers, were to come up in the future, we would explore local solutions in Toulouse (CALMIP).

Analysis and needs

HH -> bbyy

SH: just starting; skimming (from common data on EOS) on LXPLUS so far.
Will move to CC.

MEM: expect significant use of CPU spring/summer 2022.

Remember the discussion we had at the CAF-PAF meeting in December 2018 (simultaneous execution of Florian's jobs and LAPP VBS jobs) ?

Since then, Annick Lleres (LPSC at the time) has performed a thorough, systematic study of Florian's code for the matrix element method (MEM). She has achieved speed-ups of a factor of ten to eighty (depending on the channel).

ITk track reconstruction using ML and Kalman

Extensive use of experimental platform at CC for memory-intensive jobs.
Extensive use of pool of V100 at CC.
> 10 TB of SPS

Near future

Activities of the team; resource needs

Any evolution strongly depends on answer to application for CPJ.

The CPJ would join/extend existing efforts at L2IT, not start completely new ones.

Details on Software involvement

Total software involvement 2022 = 2.6 FTE

Name	OTP	Activity	System	Task	FTE
C. Rougier		Software	Upgrade	ITk reconstruction	0.4
J. M. Sardain		Software	Upgrade	ITk reconstruction	0.4
C. Biscarat		Software	Upgrade	SW infrastructure	0.1
S. Caillou		Software	Upgrade	ITk reconstruction	1.0
J. Stark		Software	Upgrade	ITk reconstruction	0.4
A. Vallier		Software	Upgrade	ITk reconstruction	0.3

Qualification task C. Rougier: Track seeding (for Kalman) in ITk

Details on Computing involvement

None (see also slide 3).