

# News - Physics Performance, October 18, 2021

P. Azzi (INFN – PD / CERN), E. Perez (CERN)

## Proposed structure for Physics Performance

- ❑ Have **working groups** that “mirror” the WGs of Physics Programme
  - Higgs / Flavours / Precision EW / Top / BSM / QCD
- ❑ Expect “**working meetings**” of these WGs where the details of the analyses are discussed.
- ❑ The **monthly Physics Performance meetings** would consist of :
  - regular status reports from these WGs
  - Detailed presentations of “case studies” when they are (close to) final or when there has been significant progress.
  - Reports on “transverse” activities – for example algorithms for b / c / g / s tagging, or packages for kinematic fits.
- ❑ Considering 1 junior + 1 more senior person as “conveners”.

Starting to think of conveners. Please contact us if you have suggestions.  
Timeline: goal is to have the first WGs in place by the end of the year.

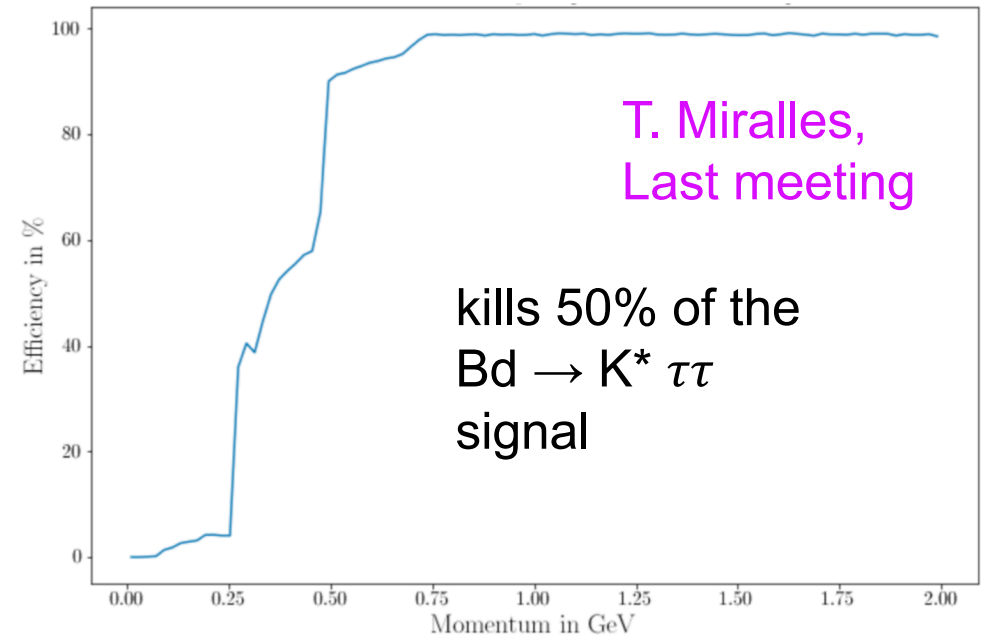
## Follow-ups from the last meeting

Delphes-based analyses reported last time spotted two issues :

### ❑ Low efficiency for low pT tracks

Now understood :

- Trivial: the efficiency formula plugged in in the “efficiency module” was over-pessimistic
- Less trivial: fixing the formula was not enough.. Understood (Michele Selvaggi, Franco Bedeschi, E.P.)

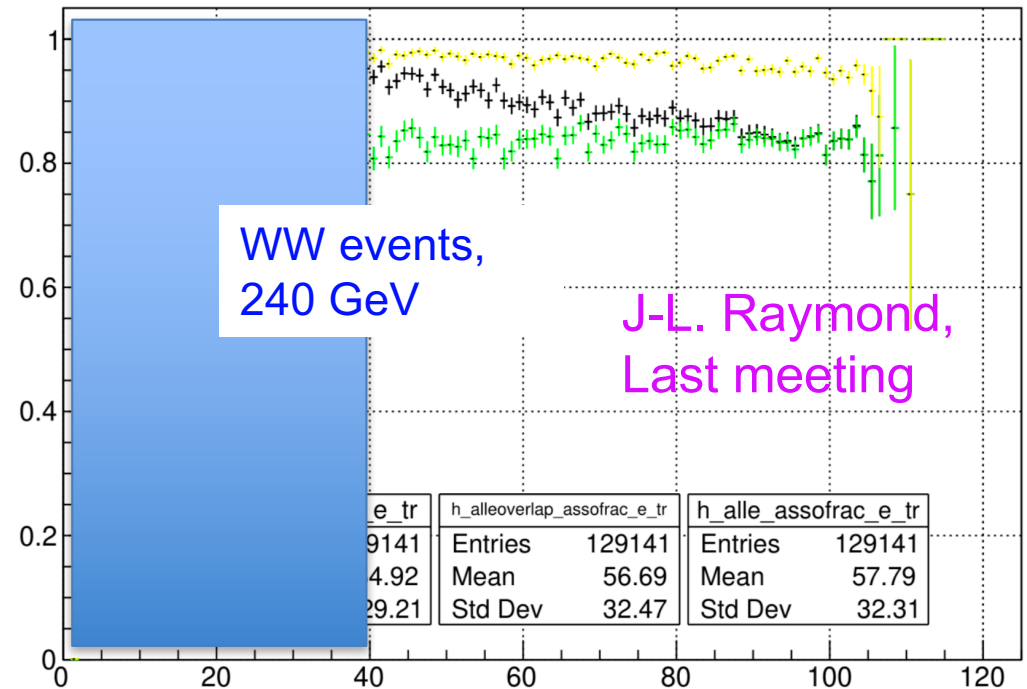
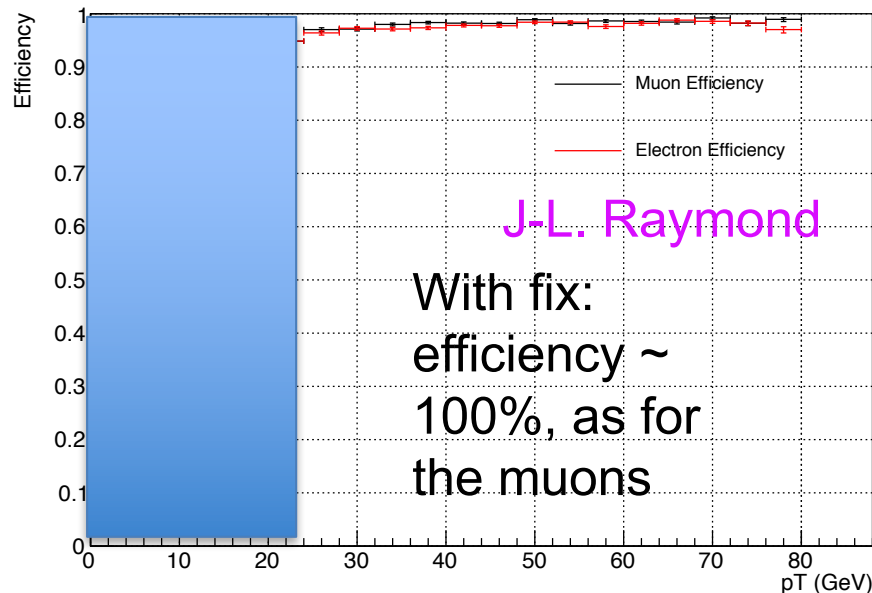


Fixes will be made in the next version of the Delphes card. Recovers full efficiency down to 100 MeV.

# Follow-ups from the last meeting (2)

## □ Inefficiencies for high pT electrons

- Initially believed to be due to isolation (cut in Delphes is a bit tight, cf N.Morange, July meeting)
- But actually induced by the “overlap removal” between electrons and photons
- Cause understood, technical – “photons” created by the particle-flow module



Ways out were checked to recover the efficiency (Jean-Loup Raymond, Lucia di Ciaccio, Michele S, E.P.).

Will be fixed in the next version of the samples.

## Future events of interest

- CEPC international Workshop, 8-12/11 China
  - <https://indico.ihep.ac.cn/event/14938/>
- ECFA “topical workshop” on Generators for “Future H/Ewk/top factories”, Nov 9-10
  - At CERN, with physical rooms
  - <https://indico.cern.ch/event/1078675/>
  - Register by Nov 3
- Next FCC France workshop (Annecy): Nov 30 – Dec 2
- FCC Physics, Experiments & Detectors workshop in Liverpool
  - 7-11 Feb 2022
- FCC Week 2022, Paris, 30/5-3/6 2022

# Today's agenda and next meeting

**15:00** → 15:10 **News**

**Speakers:** Emmanuel Francois Perez (CERN) , Patrizia Azzi (INFN Padova (IT))

**15:10** → 15:35 **Strange quark tagging with convolutional neural networks**

**Speakers:** Eduardo Plörer, KUNAL GAUTAM (VUB - IDP (Vrije Universiteit Brussel)) , Kunal Gautam

**15:35** → 15:55 **New version of the KKMC generator with beam-energy spread**

**Speakers:** Marcin Chrzaszcz (Polish Academy of Sciences (PL)) , Staszek Jadach (Polish Academy of Sciences (PL))

Next meeting : Monday, November 15, 2021