

LHC EW WG 2: Jets and EW bosons

- Conveners:
 - ATLAS: Eram Rizvi, Ben Nachman
 - CMS: Vieri Candelise, Hannes Jung, Mikko Voutilainen
 - LHCb: Stephen Farry, Will Barter
 - ALICE: James Mulligan
 - TH: Marek Schoenherr

- further reading: [WG Twiki](#)

News

- very good mini-workshop on V+HF (16.March, 30.March, 6.April)
 - thanks a lot Vieri for organizing this !

Steps toward Yellow Report

CERN Yellow Reports: Monographs
Volume X/2019

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Jets and EW Bosons

Report of the EW Working Group

Editors: ALICE: James Mulligan
ATLAS: Eram Rizvi, Ben Nachman
CMS: Vieri Candelise, Mikko Voutilainen, Hannes Jung
LHCb: Stephen Farry, Will Barter
Theory: Marek Schoenherr

- First template version available:
<https://gitlab.cern.ch/lhcewkwg/lhcewkwg-vjets/yellowreport.git>



Steps toward Yellow Report

- need to proceed with projects for yellow report:
 - Treatment of systematic uncertainties (Louie) → in progress
 - replies from experiments and agreement still pending → conveners need to push for decisions
 - Benchmark comparisons → on hold
 - missing Rivet plugins → need to progress
 - systematic comparison with SHERPA, HERWIG, POWHEG, MCatNLO (P8 and also including PB method)
 - including uncertainties from pdf, scales, parton shower
 - study on scale definition in hard process
 - calculation of chi2 (using Louie method)
 - LHC tune
 - start with tuning intrinsic kt and shower parameters
 - P8, Herwig, Sherpa ?
 - see talks today

Steps toward Yellow Report

- Reports will appear on CDS as CERN-LPCC reports and be submitted to the arxiv, but not submitted to a journal (formally these are not “Yellow Reports”, which is a separate category of documents)
- Schedule
 - Aim for substantial progress and summaries of available content/report drafts (or even final/near-final versions) at next EW WG general meeting (probably June/July 2020 at CERN)
 - Reports could be ready to be released by the fall at the latest for example
 - Tasks:
 - intrinsic kt for LHC tune
 - Benchmark comparisons

Jets and EW bosons

- Further reading
 - [Twiki](#)
 - [regular meetings](#): every second week, Mondays 16-18

WG 2: Agenda for today

LHC-EW WG: Jets and EW bosons



Monday 20 Apr 2020, 16:00 → 17:10 Europe/Zurich

Videoconference
Rooms

 LHC-EW_WG__Jets_and_EW_bosons

Join



16:00

→ 16:10

Intro

Speaker: Hannes Jung (Deutsches Elektronen-Synchrotron (DE))

🕒 10m



16:10

→ 16:30

The transverse momentum spectrum of low mass Drell-Yan production at next-to-leading order in the parton branching method

Speaker: Francesco Hautmann (University of Antwerp (BE))

🕒 20m



16:30

→ 16:50

Determination of intrinsic k_t distribution in DY processes

🕒 20m



16:50

→ 17:10

Discussion on projects: Benchmark comparison and LHC tune

🕒 20m



Appendix

Jets and EW bosons: Benchmark Comparisons (1)

- use NNPDF3.1 pdf, CUETp8M1 tune (or something different ?)
- Jets, W+jets, Z+jets
 - POWHEG
 - dijet at NLO (**1.1**)
 - effect of MPI (MPI on/off)
 - compare inclusive jets with POWHEG for different hdamp params
 - PS on/off
 - trijet with MiNLO (**1.2**)
 - role of hdamp ?
 - PS on/off

Jets and EW bosons: Benchmark Comparisons (2)

- use NNPDF3.1 pdf, CUETp8M1 tune (or something different ?)
- Jets, W+jets, Z+jets
 - MCatNLO
 - dijets at NLO **(2.1)**
 - effect of MPI ?
 - compare with different merging scales
 - PS on/off
 - 2+3 jets at NLO (FxFx) **(2.2)**
 - merging scales ?
 - PS on/off
 - 2+3+4 jets at NLO **(2.3)**
 - merging scales
 - PS on/off

Jets and EW bosons: Benchmark Comparisons (3)

- use NNPDF3.1 pdf, CUETp8M1 tune (or something different ?)
- Jets, W+jets, Z+jets
 - Sherpa (in POWHEG or MCatNLO mode ?)
 - dijets at NLO (**3.1**)
 - effect of MPI
 - merging scales ?
 - PS on/off
 - 2+3 jets at NLO (**3.2**)
 - PS on/off
 - 2+3+4 jets at NLO (**3.3**)
 - PS on/off