

Cascade developer meeting

- Hope that you are all ok !

Next Conferences/workshops

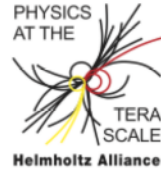
- REF 2021 15-19 Nov 2021 <https://indico.desy.de/event/28334/>

PB TMD with CASCADE - Monte Carlo school

Helmholtz Alliance

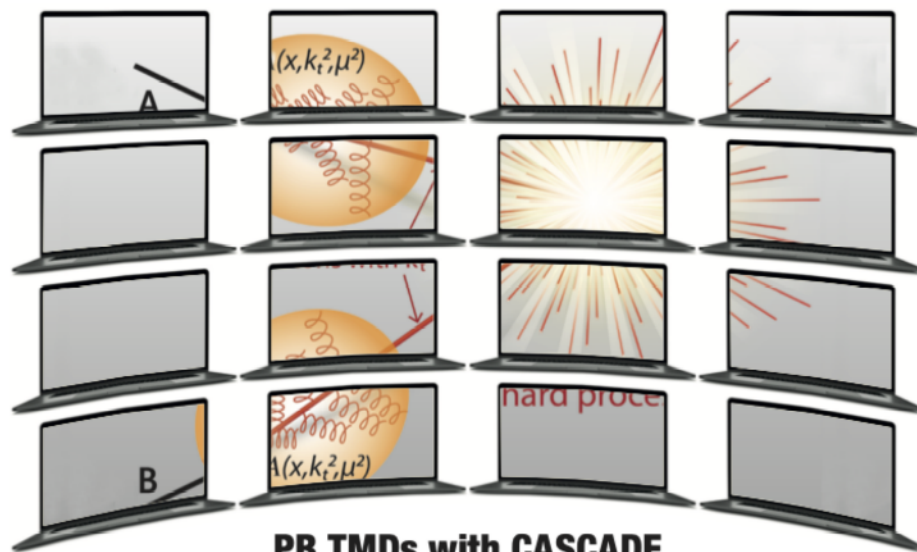
PHYSICS AT THE TERASCALE

Deutsches Elektronen-Synchrotron DESY +++ Karlsruher Institut für Technologie - Großforschungsbereich +++ Max-Planck-Institut für Physik +++ Rheinisch-Westfälische Technische Hochschule Aachen
+++ Humboldt-Universität zu Berlin +++ Rheinische Friedrich-Wilhelms-Universität Bonn +++ Technische Universität Dortmund +++ Technische Universität Dresden +++ Albert-Ludwigs-Universität
Freiburg +++ Justus-Liebig-Universität Gießen +++ Georg-August-Universität Göttingen +++ Universität Hamburg +++ Ruprecht-Karls-Universität Heidelberg +++ Karlsruher Institut für
Technologie - Universitätsbereich +++ Johannes Gutenberg-Universität Mainz +++ Ludwig-Maximilians-Universität München +++ Universität Regensburg +++ Universität Rostock +++ Universität
Siegen +++ Julius-Maximilians-Universität Würzburg +++ Bergische Universität Wuppertal +++



Virtual Monte-Carlo School 2021

8-12 November 2021 (on Zoom)



PB TMDs with CASCADE

Programme:

- Intro to MC techniques and Parton Shower (S. Prestel, Lund)
- Intro to Parton Branching TMDs (F. Hautmann, Oxford/Antwerp)
- Intro to CASCADE (A. Bermudez Martinez, DESY)
- Physics at future colliders (M. Mangano, CERN)
- Exercises on high pT di-jets at LHC energies
- Results of exercises will be presented at REF2021 workshop and published

Organisation Team: Armando Bermúdez Martínez (DESY), Hannes Jung (DESY), Sara Taheri Monfared (DESY), Qun Wang (DESY)

Please register on <https://indico.desy.de/event/31877/>

www.terascale.de/mc2021

- 53 registrations until now
- very diverse:
 - students (from summerstudents)
 - PhD students
 - Postdocs
 - Senior scientists

PB TMD with CASCADE - Monte Carlo school

	8 Nov 2021		9 Nov 2021		10 Nov 2021		11 Nov 2021		12 Nov 2021	
AM										
PM	13:00	Lecture: Intro to Monte Carlo (until 15:00) () $\mathcal{Q}$ -	13:00	Lecture: Intro to PB TMDs and CASCADE (until 16:00) () $\mathcal{Q}$ -	13:00	Exercises on Dijets at LHC (until 15:00) () $\mathcal{Q}$ -	13:00	Exercises on Dijets at LHC (until 15:55) () $\mathcal{Q}$ -	13:00	Summary - preparation of contribution (until 15:00) () $\mathcal{Q}$ -
	13:00	Lecture: Intro to Monte Carlo - Stefan Prestel (Lund University) () $\mathcal{Q}$ -	13:00	Lecture: Intro to PB TMDs - Francesco Hautmann (Oxford/Antwerpen) Francesco Hautmann (Oxford/Antwerpen) () $\mathcal{Q}$ -	13:00	Exercises on Dijets at LHC () $\mathcal{Q}$ -	13:00	Exercises on Dijets at LHC () $\mathcal{Q}$ -	13:00	Summary - preparation of contribution () $\mathcal{Q}$ -
	15:00	Technical setup (until 16:00) () $\mathcal{Q}$ -	15:00	Introduction to CASCADE - Armando Bermudez Martinez (CMS (CMS Fachgruppe QCD)) () $\mathcal{Q}$ -			16:00	Physics at future colliders - Michelangelo Mangano (CERN) () $\mathcal{Q}$ -		
	15:00	Technical setup () $\mathcal{Q}$ -	16:00	Technical setup (until 16:30) () $\mathcal{Q}$ -			17:30	Science & Society Seminar: Science for Peace - Rolf Heuer (CERN) () $\mathcal{Q}$ -		
			16:00	Technical setup () $\mathcal{Q}$ -						

PB TMD with CASCADE – Exercise sessions

- All run on prepared LHE files from MCatNLO for dijets at 13 TeV
 - run CASCADE3 with prepared setup: 1000 lhe files → 100 jobs/person, allowing fast turnaround
 - 1st day: rivet plugin (prepared) but to be filled for pt of dijet system, Delta phi
 - 2nd day: rivet plugin for azimuthal correlations from CMS
 - focus in on interpretation
 - what are effects of TMDs
 - what is the TMD shower doing
 - which free parameters we have ?
 - lhescale, scale for FPS, scale-factor for FPS,
- Parallel sessions (in breakout rooms)
 - 1 fNLO
 - 2 LHE parton level and TMDs: effect of subtraction terms
 - 3 TMDs + ISR + FSR
 - 4 Scale and TMD uncertainties – shower uncertainties ?
 - 5 comparison with Pythia8 ?
 - 6 CASCADE3 and merging ?
 - do we have enough resources for this