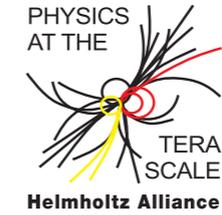


Helmholtz Alliance

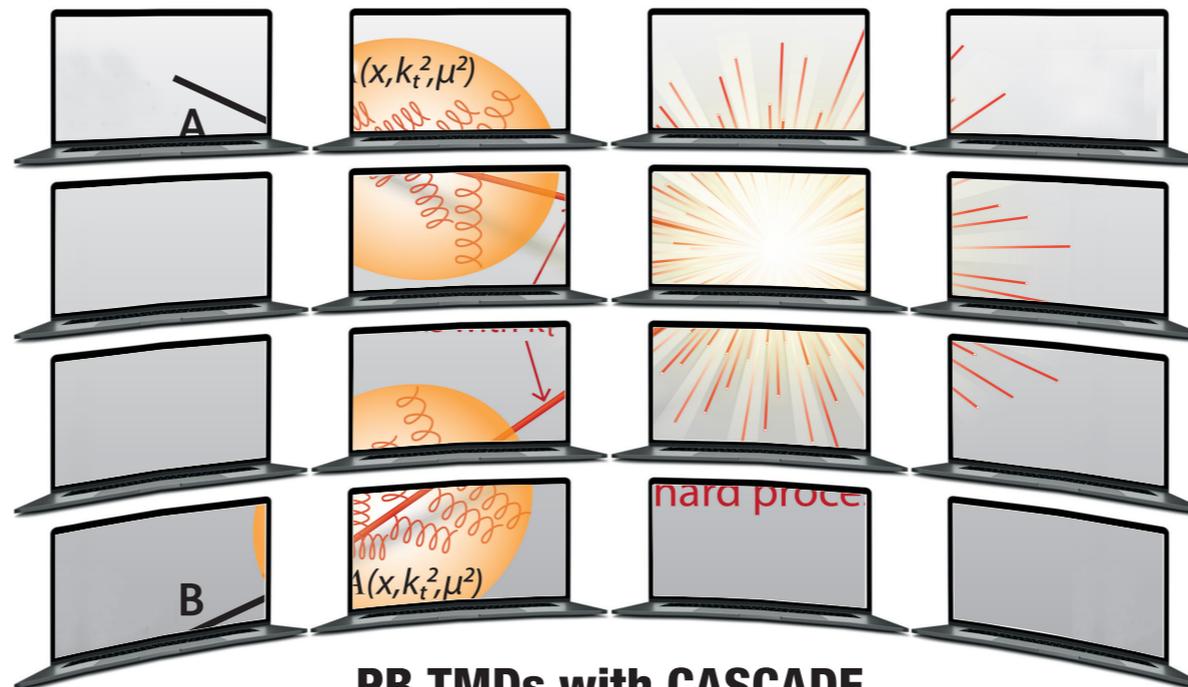
# PHYSICS AT THE TERASCALE



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](http://www.terascale.de/mc2021)**

# Welcome to MC school: PB TMDs with CASCADE

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- Welcome to the first international Terascale MC school
  - 57 registrants from many different countries
- Goal of school:
  - learn basics on Monte Carlo techniques and Parton Branching TMDs
  - learn first steps towards predictions using PB TMD MC CASCADE
  - apply predictions to high pt dijet production in pp at LHC
  - no installation required, we'll work on DESY machines
    - if requested, a special session will be given with installation instructions

# PB TMD with CASCADE - Monte Carlo school

MONDAY, 8 NOVEMBER		
13:00	→ 13:05	<b>Welcome</b> Speaker: Hannes Jung (DESY) 5m
13:05	→ 15:00	<b>Lecture: Intro to Monte Carlo</b> Speaker: Stefan Prestel (DESY) 1h 55m
15:00	→ 16:00	<b>Technical setup</b> 1h
TUESDAY, 9 NOVEMBER		
13:00	→ 15:00	<b>Lecture: Intro to PB TMDs</b> Speaker: Francesco Hautmann (Oxford/Antwerpen) 2h
15:00	→ 16:00	<b>Introduction to CASCADE</b> Speaker: Armando Bermudez Martinez (CMS (CMS Fachgruppe QCD)) 1h
16:00	→ 16:30	<b>Technical setup</b> 30m
WEDNESDAY, 10 NOVEMBER		
13:00	→ 15:00	<b>Exercises on Dijets at LHC</b> 2h
THURSDAY, 11 NOVEMBER		
13:00	→ 15:30	<b>Exercises on Dijets at LHC</b> 2h 30m
16:00	→ 17:00	<b>Physics at future colliders</b> Speaker: Michelangelo Mangano (CERN) 1h
17:30	→ 19:30	<b>Science bridging Cultures and Nations (Science &amp; Society Science4Peace seminar)</b> <a href="https://indico.desy.de/event/32037/">https://indico.desy.de/event/32037/</a> Speaker: Rolf Heuer (CERN) 2h
FRIDAY, 12 NOVEMBER		
13:00	→ 15:00	<b>Summary - preparation of contribution</b> 2h

# PB TMD with CASCADE - Monte Carlo school

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Enjoy the school

All lectures will be recorded