

Session Program

25-29 May 2026

**28th Conference on Computing in High
Energy and Nuclear Physics (CHEP 2026)**

Track 5 - Event generation and simulation

Chulalongkorn University

Monday 25 May

13:45

Track 5 - Event generation and simulation: Fast Simulation 1

Session | Location: Chulalongkorn University

13:45-14:03 **Generative Muon Punch-Through with Flow-Matching in ATLAS**

Speaker

Firdaus Soberi

14:03-14:21 **Simulating the CMS High-Granularity Calorimeter with Generative AI**

Speaker

Oz Amram

14:21-14:39

DiT-based fast simulation for the CEPC long-bar crystal electromagnetic calorimeter

Speaker

ZHIHAO LI

14:39-14:57 **Modern Generative Models for Fast Calorimeter Simulation in ATLAS**

Speaker

Florian Ernst

14:57-15:15

Adapting PARNASSUS: A Fast Simulation Tool for the ATLAS Experiment

Speaker

Abdelrahman Asem Elabd

15:15

16:15

Track 5 - Event generation and simulation: Fast Simulation 2

Session | Location: Chulalongkorn University

16:15-16:33 **Fast Hybrid Simulation for the LHCb Calorimeters**

Speaker

Matteo Rama

16:33-16:51

End-to-End Fast Simulation of the ALICE Zero Degree Calorimeter using Generative Models

Speaker

Davide Fuligno

16:51-17:09

Electro-magnetic calorimeter shower simulation using machine learning techniques at BESIII experiment

Speaker

Tong Liu

17:09-17:27

Improving simulation of extreme EM calorimeter showers with deep neural networks

Speaker

Minh-Tuan Pham

17:27-17:45

Exploring Potential Pathways to Accelerate ePIC Detector Simulation

Speakers

Sakib Rahman, Sakib Rahman

17:45-18:03

Evaluation of VecGeom Solids in the Context of ALICE O2 Simulation

Speaker

Ivana Hrivnacova

18:03

Tuesday 26 May

13:45

Track 5 - Event generation and simulation: Fast Simulation 3

Session | Location: Chulalongkorn University

13:45-14:03 **CC4SF - Calibrated classifiers for scale factors (FastSim)**

Speaker

Samuel Louis Bein

14:03-14:21

Accelerating ALICE background simulations: A WGAN Approach to slow-neutron induced TPC loopers

Speaker

Marco Giacalone

14:21-14:39

Quantum based Generative Models for Fast Calorimeter Simulation in ATLAS and Future Colliders

Speakers

Prof. Matteo Franchini, Matteo Franchini

14:39-14:57

Machine Learning for Faster Simulations at Belle II

Speaker

David Giesege

14:57-15:15

step2point: Enhancing data preparation for point-cloud-based fast simulation

Speaker

Anna Zaborowska

15:15

16:15

Track 5 - Event generation and simulation: Fast Simulation 4

Session | Location: Chulalongkorn University

16:15-16:33

Data Overlay for Underlying Event modeling in Heavy Ion collisions in ATLAS

Speaker

Tadej Novak

16:33-16:51

CaloTrilogy: Toward a Breakthrough in One Step, End-to-End, Physics-Guided Shower Generation for Modern Calorimeters

Speakers

Cheng Jiang, Cheng Jiang

16:51-17:09

The electronics simulation software in the JUNO experiment

Speaker

Ze Chen

17:09-17:27

Updates on ML-based fast and flash simulations at LHCb

Speaker
Michał Mazurek

17:27-17:45

CMS FlashSim: how an end-to-end ML approach speeds up simulation in CMS

Speaker
Filippo Cattafesta

17:45-18:03 **PARSIFAL: a parametrized simulation for μ -RWELL detectors**

Speaker
Riccardo Farinelli

18:03

Wednesday 27 May

13:45

Track 5 - Event generation and simulation: Event Generation 1

Session | Location: Chulalongkorn University

13:45-14:03

Hardware Acceleration of NLO Event Generation with MadGraph4GPU and PEPPER

Speaker

Daniele Massaro

14:03-14:21

New GPU developments in the Madgraph CUDACPP plugin: kernel splitting, helicity streams, cuBLAS color sums

Speaker

Andrea Valassi

14:21-14:39

Event Generation Acceleration on AI Engine Cores: A Case Study

Speaker

Pelayo Leguina

14:39-14:57

Generative AI for hadron physics

Speaker

Marco Andrea Battaglieri

15:15

13:45

Track 5 - Event generation and simulation: Full Simulation 1

Session | Location: Chulalongkorn University

13:45-14:03

Geant4 electromagnetic physics for future experiments at colliders

Speaker

Prof. Vladimir Ivantchenko

14:03-14:21

Full-chain Simulation and Data-driven Refinement of the BESIII CGEM Detector Response

Speaker

Xinnan Wang

14:21-14:39

New developments in the experiment-independent Gaussino simulation software and its use in LHCb

Speaker

Wojciech Krupa

14:39-14:57

Muon simulation in JUNO

Speaker

Jing Chen

14:57-15:15

Integration and Performance of the ATLAS FastChain Workflow towards Run 4

15:15

Speaker
Dominik Duda

16:15

Track 5 - Event generation and simulation: Full Simulation 2

Session | **Location:** Chulalongkorn University

16:15-16:33 **Energy efficiency of GPU-based Monte-Carlo simulation using AdePT**

Speaker
Juan Gonzalez Caminero

16:51-17:09 **Full Simulation of the CMS experiment progress: from Run3 to Run4**

Speaker
CMS Collaboration

17:09-17:27 **Geometry tracking in Celeritas for EM and optical physics**

Speaker
Seth Johnson

17:45-18:03

Impact of Siloed Geometry Data on LHC Experiments. The ATLAS Experiment Case Study.

Speaker
Roger Jones

18:03

Thursday 28 May

13:45

Track 5 - Event generation and simulation: Event Generation 2

Session | Location: Chulalongkorn University

13:45-14:03

On numerical validation within MadGraph5 for performance and efficiency enhancement

Speaker

František Stloukal

14:03-14:21

Focused Angular N-Body Event Generator (FANG)

Speaker

Itay Horin

14:21-14:39

New techniques for reducing negative-weight events in MC@NLO-type simulations

Speaker

Andrea Valassi

14:39-14:57

Cell Reweighting Algorithms for Pathological Weight Mitigation in LHC Simulations using Optimal Transport

Speakers

Lauren Meryl Hay, Rishabh Jain

14:57-15:15

Revisiting the Fermi Break Up model for the Geant4 library

Speaker

Aleksandr Svetlichnyi

15:15

16:15

Track 5 - Event generation and simulation: Simulation Tuning, Calibration & Validation

Session | Location: Chulalongkorn University

16:15-16:33

AI-Assisted Detector Design and optimization Environment for large-scale nuclear and particle physics experiments

Speaker

Cristiano Fanelli

16:51-17:09

Reweight Me No More: Transformer-Based Mitigation of Multi-Dimensional Mismodelling in HEP Simulations

Speaker

Matthias Schott

17:09-17:27

Simulation-based Inference for Precision Neutrino Physics through Neural Monte Carlo Tuning

Speaker

Dr Arsenii Gavrikov

17:27-17:45

Differentiable particle simulation for detector optimization

Speaker

Jeffrey Krupa

17:45-18:03

Machine Learning for Retrieving Published Experimental Data to Validate the Physics Content of Monte Carlo Transport Codes

Speaker

Elisabetta Ronchieri

18:03