

Session Program

14-18 Sept 2026



ML4Jets 2026

Parallel Talks

Hörsaalzentrum University of Vienna, C1
Spitalgasse 2 / Hof 2 A-1090 Vienna

Monday 14 September

11:00

Parallel Talks: Uncertainty Quantification

Session | **Location:** Hörsaalzentrum University of Vienna, C2 | **Convener:** Ben Assi

11:00–11:20

Model Uncertainty in the Measurement of the Gluon-Jet Fraction

Speaker

Siarhei Shulha

11:20–11:40

Local Conformal Predictions for Calibrated Surrogates

Speaker

Suprio Dubey

11:40–12:00

Know What You Don't Flow

Speaker

Lorenz Vogel

12:00

13:30

Parallel Talks: Phenomenology

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Ben Assi

13:30–13:50

Mass-unspecific classifiers for mass-dependent searches

Speaker

SERGIO RODRIGUEZ BENITEZ

13:50–14:10

(ZOOM) A Machine-Learning Analysis of the Higgs Boson in the $H \rightarrow ZZ^* \rightarrow 4\ell$ Channel

Speaker

Mane Papoyan

14:10–14:30

Hunting the Unseen: Parameter-Agnostic Deep Learning for Semi Visible Jet Tagging

Speaker

Mr Miguel Angel Avendano Bernal

14:30–14:50

Understanding the Performance Gains of a full-event $HH \rightarrow 4b$ Search

Speaker

Yipin Wang

14:50–15:10

Enhancing the Sensitivity for Triple Higgs Boson Searches with Deep Learning Techniques

Speaker

Feng-Yang Hsieh

15:10–15:30

Measurement of the Energy Dependence of Strong Isospin Violation in $\Upsilon(4S)$ Decays Using a Neural Network Event Classifier**Speaker**

Lena Nowatzki

15:30

16:00

Parallel Talks: Reinterpretation & Theory**Session** | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Theo Heimel

16:00–16:20

Open library of learned likelihoods from LHC experiments**Speakers**

Humberto Reyes-Gonzalez, Dr Humberto Reyes-González

16:20–16:40

Learning to bin: differentiable approach for multi-dimensional discriminants in high-energy physics**Speaker**

Nitish Kumar Kasaraguppe Veerappa Gowda

16:40–17:00

Resummed Distribution Functions: Making Perturbation Theory Positive and Normalized**Speaker**

Radha Mastandrea

17:00–17:20

Theory-informed neural networks for particle physics**Speaker**

Barry Dillon

17:20–17:40

Scaling Particle-Level Foundation Models on Real Heavy-Ion Collision Data**Speaker**

João A. Gonçalves

18:00

Tuesday 15 September

11:00

Parallel Talks: Generative Models

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Michał Mazurek

11:00–11:20 **(ZOOM) Forecasting Generative Amplification**

Speaker

Sascha Cassandra Diefenbacher

11:20–11:40 **Generative Amplification with Surrogate Monte Carlo**

Speaker

Rebecca Revelli

11:40–12:00 **Neural Control Variates at LO and NLO**

Speaker

Sophia Vent

12:00

13:30

Parallel Talks: Generative Models

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Jay Ajitbhai Sandesara

13:30–13:50

Efficient Event Generation for High-Multiplicity LHC Processes: An End-to-End GPU Workflow with Normalizing Flows

Speaker

Daohan Wang

13:50–14:10 **Too good to go: Upcycling Phase-Space Points for Multijet Processes**

Speaker

Konrad Helms

14:10–14:30 **MadNIS at NLO**

Speaker

Giovanni De Crescenzo

14:30–14:50 **Sampling NNLO QCD phase space with normalizing flows**

Speaker

Timo Janßen

14:50–15:10 **Re-Ranking the CaloChallenge 2022**

Speaker

Agni Purani

15:10–15:30

FastSimu: Constraint-Preserving Generative Fast Simulation of Optical-Photon Response at Wavelength-Shifting-Fiber Entry

Speaker

Mr Jiacheng Wu

15:30

16:00

Parallel Talks: Generative Models**Session** | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Manuel Szwec

16:00–16:20

Toward Complete ML-Based Simulation for CMS with FlashSim**Speaker**

Prabhat Solanki

16:20–16:40

To surrogate or to differentiate? A Delphes3 optimization study**Speaker**

Luigi Favaro

16:40–17:00

Parnassus for Detector Simulation with Legacy e^+e^- Collider Data**Speaker**

Ya-Feng Lo

17:00

Wednesday 16 September

10:30

Parallel Talks: Fast Simulation

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Sascha Cassandra Diefenbacher

10:30–10:50

Simulating the CMS High-Granularity Calorimeter with Generative AI

Speaker

Sitian Qian

10:50–11:10

Fast Calorimeter Simulation in ATLAS with Modern Generative Models

Speaker

Florian Ernst

11:10–11:30

AllShowers: One model for all calorimeter showers

Speaker

Thorsten Buss

11:30–11:50

Fast Point Cloud Generation via Latent Diffusion

Speaker

Martina Mozzanica

11:50–12:10

step2point: Optimising Point Cloud Representations for Fast Calorimeter Simulation

Speaker

Peter McKeown

12:10–12:30

FASTColor - Full-color Amplitude Surrogate Toolkit for QCD

Speaker

Javier Mariño Villadamigo

12:30

14:00

Parallel Talks: Fast Simulation / Explainable AI

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Michał Mazurek

14:00–14:20

SPADE: Split-and-Delay Embeddings for Autoregressive High-Granularity Calorimeter Simulation

Speaker

Henning Rose

14:20–14:40

Improving neural generative models with density estimation and Monte-Carlo resampling

Speaker

Dr Minh Tuan Pham

14:40–15:00

Information Geometry of Learned Latent Representations

16:00

16:30

18:10

Speaker
Rebecca Maria Wolfgramm-Kuntz

15:00–15:20

Information Geometry of Latent Representations for Interpretable Jet Tagging

Speaker
Benedikt Schosser

15:20–15:40

Where Does the Particle Transformer Look Inside a Jet? A Jacobian-Lens Interpretation

Speaker
Sitian Qian

15:40–16:00

Do Jet Taggers Learn Physics? Probing and Steering Latent Directions in a Transformer Tagger

Speaker
Savannah Thais

Parallel Talks: Explainable AI

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Marie Hein

16:30–16:50

Autoencoders for Symbolic Distillation of Black-Boxes

Speaker
Alan Gu

16:50–17:10

Jet Taggers Rediscover the Energy Correlators: A Causal and Explainable-AI Dissection

Speaker
Sanmay Ganguly

17:10–17:30

A Unified Geometric Framework for Understanding Collider Event Manifolds

Speaker
Hancheng Li

17:30–17:50

Interpreting Parton Distributions with Shapley Values

Speaker
Raphael Bonnet Guerrini

17:50–18:10

Data driven hadronization with HOMER

Speaker
Susie Kim

Thursday 17 September

10:30

Parallel Talks: Anomaly Detection

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Barry Dillon

10:30–10:50

Getting More Power from Anomaly Detectors for Free with Weights

Speaker

Rikab Gambhir

10:50–11:10

Improving direct background estimation for resonant anomaly detection

Speaker

Mark Faselow

11:10–11:30

Kitchen Sink Anomaly Detection

Speaker

Lukas Lang

11:30–11:50

Anomaly detection with normalizing flows for model-agnostic new physics searches

Speaker

Rafal Maselek

11:50–12:10

Unsupervised Machine Learning for Jet-Based Anomaly Detection in ATLAS

Speakers

Antonio D'Avanzo, Elvira Rossi, Francesco Crotto, Francesco Conventi, Graziella Russo

12:10–12:30

Look Everywhere Effects in Anomaly Detection

Speaker

Marie Hein

12:30

14:00

Parallel Talks: Anomaly Detection

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Marie Hein

14:00–14:20

Domain Adaptation Against Background Sculpting

Speaker

Vincent Benne

14:20–14:40

HAXAD: Anomaly Detection in the Higgs Peak

Speaker

Dennis Noll

14:40–15:00

Recent Results from Anomaly Detection Searches on CMS

Speaker

Tore Von Schwartz

16:00

16:30

17:30

15:00–15:20

Towards a Statistical Interpretation of the Normalized Autoencoder

Speaker

Jonathan Ostertag-Henning

15:20–15:40

Multitask, Every Region, All at Once : Fine-Tunable Region-Conditioned Simulation-Based Inference for Collider Analysis

Speaker

Yong Sheng Koay

Parallel Talks: Scaling Laws

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Anna Hallin

16:30–16:50

Scaling laws for amplitude surrogates

Speaker

Joaquin Iturriza Ramirez

16:50–17:10

Neural Scaling Laws for Jet Generation

Speaker

Anna Kindsvater

17:10–17:30

Scaling Laws for the Unified Particle Transformer in Heavy-Flavour Tagging

Speaker

Pavlo Kashko

Friday 18 September

10:30

Parallel Talks: Equivariant NN

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna | **Convener:** Manuel Szewc

10:30–10:50

Virtues and Vices of Equivariant Transformers

Speaker

Jonas Spinner

10:50–11:10

Economical Jet Taggers -- Equivariant, Slim and Quantized

Speaker

Antoine Petitjean

11:10–11:30

Group equivariance in infrared and collinear safe graph neural networks for jet classification

Speaker

Vishal Singh Ngairangbam

11:30–11:50

(ZOOM) Enforcing IRC Safety and Lipschitz-Constrained Insensitivity to Non-Perturbative Effects in Transformers

Speaker

Umar Sohail Qureshi

11:50–12:10

One Generator, Any Process: LLM-Conditioning for the LHC

Speaker

Thanush Sivagnanalingam

12:30

14:00

15:00

Parallel Talks

Session | **Location:** Hörsaalzentrum University of Vienna, C2, Spitalgasse 2 / Hof 2 A-1090 Vienna