

Session Program

24-28 Aug 2026



EUROPEAN COALITION FOR AI
IN FUNDAMENTAL PHYSICS
CONFERENCE
EuCAIFCon 2026

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Explainability & Theory

Kirchhoff Institute for Physics (KIP), Foyer
Im Neuenheimer Feld 227 69120 Heidelberg Germany

Monday 24 August

16:00

Explainability & Theory

Session | Location: 1.404 | Convener: Gert Aarts

16:00-16:08

The Latent Information Geometry of Jet Classification

Speaker

Rebecca Maria Kuntz

16:10-16:18

From Information Geometry to Jet Substructure: A Triality of Cumulant Tensors, Energy Correlators, and Hypergraphs

Speaker

Aritra Bal

16:20-16:28

Generative Criticality in Large Language Model Temperature Scaling

Speaker

Xingyu Guo

16:30-16:38

Steering in Theory Space: Representation Engineering of a Lagrangian Transformer

Speaker

Yong Sheng Koay

16:50-16:58

StableWein: A Computational Tool for Bounded-From-Below Constraints in the Z2 x Z2-Symmetric Three-Higgs-Doublet Model

Speaker

Darius Jurčiukonis

17:00-17:08

Validation, Calibration, and Explainability of Machine Learning Models - From Particle Physics to Eye-Disease Prognosis

Speaker

Robert McNulty

17:10-17:18

Explainable Fuzzy-AI Reasoning for Skin Radiation Risk Classification in Medical Physics Applications

Speaker

Seyedeh Fatemeh Mirekhtiary

17:30

Wednesday 26 August

16:00

Explainability & Theory

Session | **Location:** 1.404 | **Convener:** Michael Krämer

16:00-16:08

Gravitational Duals from Equations of State: Large Hierarchies and False Vacua

Speaker

Pau Solé Vilaró

16:10-16:18

Physics-informed Renormalisation Group Flows

Speaker

Friederike Ihssen

16:20-16:28

Community Detection on Complex Networks through Transformer-based Message Passing and Denoising Diffusion

Speaker

Edoardo Murano

16:30-16:38

A graph-bandwidth law for context windows in autoregressive samplers

Speaker

Tae-Geun Kim

16:50-16:58

QUIVER: QUAntum-Informed Views for Enhanced Representations in Large Machine Learning Models

Speaker

Aritra Bal

17:00-17:08

ARQuAdia-Net: Learning Quantum Annealing Dynamics for 3-SAT

Speaker

Lorenzo Colantonio

17:10-17:18

tn4ml: Tensor Network Training and Customization for Machine Learning

Speaker

Ema Puljak

17:20-17:28

Geometry of hidden feature spaces in Quantum Neural Networks

Speaker

Vishal Ngairangbam

17:30

Thursday 27 August

14:00

Explainability & Theory

Session | **Location:** 1.404 | **Convener:** Christoph Weniger

14:00-14:08

Discovering Euler-Lagrange equations from trajectory data

Speaker

Luca Wolf

14:10-14:18

Learning Relativistic Geodesics and Chaotic Dynamics via Stabilized Lagrangian Neural Networks

Speaker

Abdullah Umut Hamzaogullari

14:20-14:28

Recovering Irreducible Three-Body Interactions with Lagrangian Neural Networks

Speaker

Sena Kalabalik

14:30-14:38

Solving Schwarzschild Geodesic Motion with Lagrangian Neural Networks

Speaker

Mr Sukru Caglar

14:50-14:58

Lagrangian Neural Networks with Simultaneously Learned Constraints

Speaker

Abdullah Umut Hamzaogullari

15:00-15:08

Black Hole Spectroscopy via Physics-Informed Neural Networks: The Case of Massive Scalar Fields in Schwarzschild Spacetime

Speaker

Prof. M. B. Cruz

15:10-15:18

Neural Boltzmann Equations

Speaker

Jonas Spinner

15:30