

Session Program

24-28 Aug 2026



EUROPEAN COALITION FOR AI
IN FUNDAMENTAL PHYSICS
CONFERENCE
EuCAIFCon 2026

EuCAIFCon 2026

Foundation Models

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

Tuesday 25 August

11:00

Foundation Models

Session | **Location:** 1.404 | **Convener:** Luigi Favaro

11:00–11:08

A Recipe for Scale: Hyperparameter-Optimal Scaling Laws End-to-End, from Analytic Toy Problems to Jet Tagging

Speaker

Matthias Vigl

11:10–11:18

Neural scaling laws for jet generation

Speaker

Anna Hallin

11:20–11:28

Scaling laws for amplitude surrogates

Speaker

Joaquin Iturriza Ramirez

11:40–11:48

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

Speaker

Yong Sheng Koay

11:50–11:58

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

Speaker

Thanush Sivagnanalingam

12:00–12:08

An LLM based AI assistant to support the operation of GSI/FAIR accelerators

Speaker

Philipp Niedermayer

12:30

Wednesday 26 August

14:00

Foundation Models

Session | **Location:** 1.404 | **Convener:** Tobias Golling

14:00–14:08

Building foundation models with low-level collision data in particle physics

Speaker

Shreya Saha

14:10–14:18

JetParticle-JEPA: An Efficient Self-Supervised Representation Learning method for Jet Tagging in High-Energy Physics

Speaker

Guillaume Letellier

14:20–14:28

Foundation Models for Anomaly Detection in HEP

Speaker

Desheng Yang

14:40–14:48

Jet representations transfer across radii: toward foundation models for high-energy physics

Speaker

Una Alberti

14:50–14:58

Toward Domain-Invariant Tokenization for Jet Foundation Models

Speaker

Giovanni Ottaviano

15:00–15:08

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

Speaker

Henning Rose

15:30

Thursday 27 August

14:00

Foundation Models

Session | **Location:** HS1 | **Convener:** Luca Fallböhmer

14:00–14:08

A Foundation Model for 21cm cosmology: Cross-Simulator Robustness via Self-Supervised Summaries

Speaker

Yannic Pietschke

14:10–14:18

Sparse autoencoders for a neutrino foundation model: From physical concepts to interpretable uncertainty

Speakers

Johann Ioannou-Nikolaides, Raphaël Bonnet-Guerrini

14:20–14:28

The Low-Level Inverse Jet-Quenching Problem: Learning Vacuum Constituents from Medium-Modified Jets

Speaker

João A. Gonçalves

15:30