Session Program

20–22 Aug 2025

HAMLET
How to Apply Machine Learning to Experimental & Theoretical PHYSICS

August 20 - 22, 2025
Copenhagen, Denmark

HAMLET-PHYSICS 2025 Conference/Workshop

Plenary

Lundbeck Auditorium

Wednesday 20 August

09:20

Plenary: Intro

Session | **Location:** Lundbeck Auditorium

09:40

11:05

Plenary: Physics Theory

Session | **Location:** Lundbeck Auditorium

11:05–11:30 **Machine Learning and Quantum Field Theory: a two-way dialogue**

Speaker
Pietro Butti

11:30–11:55 **Machine learning for analytic calculations in theoretical physics**

Speaker
Matthias Wilhelm

11:55

13:30

Plenary: Foundation Model

Session | **Location:** Lundbeck Auditorium

13:30–13:55 **PolarBERT, a foundation model for the IceCube Neutrino Observatory**

Speaker
Inar Timiryasov

13:55

15:25

Plenary: Particle Physics Applications

Session | **Location:** Lundbeck Auditorium

15:25–15:50
When MAGIC met IceCube: Doing Gamma-Ray Astronomy with Neutrino Event Reconstruction

Speaker
Jarred Green

15:50–16:15 **Imaging Electron Beams with Virtual Diagnostics**

Speaker
Johan Lundquist

16:15–16:45 **Lightning talks**

16:45

Thursday 21 August

09:10

Plenary: AI for Society

Session | **Location:** Lundbeck Auditorium

09:10–09:35

The Quantum Technology ecosystem: A data-driven analysis of policy trajectories and the labor market

Speaker
Simon Richard Goorney

09:35–09:50 **Machine Unlearning**

Speaker
Vinay Chakravarthi Gogineni

09:50

11:10

Plenary: Nuclear & Quantum

Session | **Location:** Lundbeck Auditorium

11:10–11:35 **Development of innovative methods for fission trigger construction**

Speaker
Brigitte PERTILLE RITTER

11:35–12:00 **Neural networks as trace-preserving quantum channels**

Speaker
Dr Muhammad Faryad

12:00

13:30

Plenary: Imaging and Environment

Session | **Location:** Lundbeck Auditorium

13:30–13:55 **Global glacier ice thickness inversion with supervised learning**

Speaker
Dr Niccolo Maffezzoli

13:55–14:20

AI-enhanced High Resolution Functional Imaging Reveals Trap States and Charge Carrier Recombination Pathways in Perovskite

Speaker
QI SHI

14:20

Friday 22 August

09:05

Plenary: Physics AI in Practice

Session | **Location:** Lundbeck Auditorium

09:05–09:35 **Past Experiences with Machine Learning**

Speaker
Troels Petersen

09:35

09:35

Plenary: Condensed Matter and Materials

Session | **Location:** Lundbeck Auditorium

09:35–10:00

Learning from Noisy Spectra: AI-Assisted Characterization of Quantum Materials via Raman Data

Speaker
YAPING QI

10:00–10:25

Achieving sub-temporal resolution in the analysis of two-state single-molecule trajectories

Speaker
Tobias Ambjörnsson

10:25

11:50

Plenary: Plenary 6

Session | **Location:** Lundbeck Auditorium

11:50–12:00 **Summary**

12:00