

## **Session Program**

**20-22 Aug 2025**



**HAMLET** August 20 - 22, 2025  
How to Apply Machine Learning to  
Copenhagen, Denmark  
**PHYSICS**

Experimental & Theoretical

# **HAMLET-PHYSICS 2025 Conference/Workshop**

## ***Plenary***

Lundbeck Auditorium

## Wednesday 20 August

09:20

### Plenary: Intro

Session | Location: Lundbeck Auditorium

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

### Plenary: Foundation Model

Session | Location: Lundbeck Auditorium

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

**Speaker**

Inar Timiryasov

13:30

### 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

### 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

### Plenary: Plenary 6

Session | Location: Lundbeck Auditorium

11:50-12:00 **Summary**

12:00