

## **Session Program**

**Apr 2 - 4, 2025**



# **3rd collaboration workshop on Reinforcement Learning for Autonomous Accelerators (RL4AA'25)**

## **Talks**

DESY, CSSB Building 15 - Lecture Hall  
Notkestraße 85, 22607 Hamburg, Germany

## Thu, April 3

2:00 PM

### Talks: RL for particle accelerators I

**Session** | **Location:** DESY, CSSB Building 15 - Lecture Hall, Notkestraße 85, 22607 Hamburg, Germany |

**Convener:** Georg Hoffstaetter

14:00 - 14:20

#### Opportunities for Reinforcement Learning in Accelerator Automation

**Speaker**

Jonathan Edelen

14:20 - 14:40

#### Reinforcement Learning for In-Spill Optimization of the Mu2e Resonant Extraction: Compensating Non-Stationarity

**Speaker**

Jason St. John

14:40 - 15:00

#### Autonomous Trajectory Steering of DC Beams at CERN's SPS Transfer Lines Using Reinforcement Learning

**Speaker**

Adrian Menor de Onate

3:00 PM

3:30 PM

### Talks: RL for particle accelerators II

**Session** | **Location:** DESY, CSSB Building 15 - Lecture Hall, Notkestraße 85, 22607 Hamburg, Germany |

**Convener:** Auralee Edelen

15:30 - 15:50

#### Exploring Reinforcement Learning for Optimal Bunch Merge in the AGS

**Speaker**

Georg Hoffstaetter

15:50 - 16:10

#### Offline Reinforcement Learning-Based Control of LEIR Injection Efficiency via Data-Driven Surrogate Modeling

**Speaker**

Mr Borja Rodriguez Mateos

4:10 PM

## Fri, April 4

9:00 AM

### Talks: General applications for particle accelerators

**Session** | **Location:** DESY, CSSB Building 15 - Lecture Hall, Notkestraße 85, 22607 Hamburg, Germany | **Convener:** Verena Kain

09:00 – 09:20

#### Geoff: Applications and Developments in 2024

**Speaker**

Dr Penny Madysa

09:20 – 09:40

#### Reinforcement Learning for Laser Alignment

**Speaker**

Matthew Schwab

09:40 – 10:00

#### Generalizing LLMs for Accelerators with RL

**Speaker**

Antonin Sulc

10:00 – 10:20

#### 6D Phase Space Beam Modelling Using Point Cloud Approach

**Speaker**

Hayg Guler

10:20 AM

10:50 AM

### Talks: General applications of RL

**Session** | **Location:** DESY, CSSB Building 15 - Lecture Hall, Notkestraße 85, 22607 Hamburg, Germany | **Convener:** Jason St. John

10:50 – 11:10

#### A Benchmark for Deep Reinforcement Learning-Based Control of Liquid-Propellant Rocket Engines

**Speaker**

Kai Dresia

11:10 – 11:30

#### Multi-Agent Reinforcement Learning to achieve reliable wireless communication

**Speaker**

Sabrina Pochaba

11:30 – 11:50

#### Reinforcement Learning-Driven Optimal Control of Perfect Entangling Two-Qubit Gates

**Speaker**

Leander Grech

11:50 – 12:10

#### RL for beam phase space distribution tuning at LCLS

**Speaker**

Auralee Edelen

12:10 PM