# Welcome to "Al & Physics"

09:00-17:00, January 28 @ 2BC

# appliedmldays.org/tracks/ai-physics

Morning session:

9:00-12:35

- Physics and Al

Neural simulation-based inference	
With Gilles Louppe	
© 09:00-09:30 January 28	View deta
Simulating the Universe with Machine Learning	
With Shirley Ho	
© 09:30-10:00 January 28	View deta
Learning molecular models from simulation and experimental data	
With Cecilia Clementi	
⊗ 10:00-10:20 January 28	View deta
Tracking High Energy Particles with Deep Learning	
With Jean-Roch Vilmant	
⊙ 10:20-10:40 January 28	View deta
Break	
⊗ 10:40-11:00 January 28	View deta
Data ex Machina: Machine Learning with Public Collider Data	
With Eric Metodlev	
© 11:00-11:20 January 28	View deta
Predicting phase transitions in many-body physics	
With Eliska Greplova	
© 11:20-11:40 January 28	View deta
Exploring string theory solutions with reinforcement learning	
With Fabian Ruehle	
○ 11:40-12:00 January 28	View deta
Statistical physics for machine learning	
With Lenka Zdeborová	
○ 12:00-12:20 January 28	View deta
WIMPs or else? Using Machine Learning for Dark Matter Detection	
With Charanjit Kaur	
© 12:20-12:35 January 28	View deta

#### Afternoon session:

13:30-17:00

- Panel discussion
- Al and Physics
- Industry

Panel discussion	
With Shirley Ho, Balazs Kegl, Danilo Jimenez Rezende, Lenka Zdeborová & Maurizio Pierini	
○ 13:30-14:00 January 28	View detail
Generative Models and Symmetries	
With Danilo Jimenez Rezende	
○ 14:00-14:30 January 28	<u>View detail</u>
Machine Learning in Physics and Beyond: experience at CERN openlab	
With Sofia Vallecorsa	
© 14:30-14:50 January 28	View detail
Deep learning driven model discovery in physics	
With Remy Kusters	
○ 14:50-15:05 January 28	View detail
Break	
⊗ 15:05-15:30 January 28	View detail
Dynamic system modelling and neural simulators	
With Balazs Kegl	
○ 15:30-16:00 January 28	View detail
Probabilistic Inference in Simulators	
With Atılım Güneş Baydin	
○ 16:00-16:20 January 28	View detail
Deep learning from physics to financial services	
With Jeremie Abiteboul	
○ 16:20-16:35 January 28	View detail
A deep neural network for simultaneous estimation of b quark energy and resolution	on for the
With Nadezda Chernyavskaya	
⊗ 16:35-16:50 January 28	View detail
Can we optimize the operation of CERN's Large Hadron Collider with Machine Lear techniques?	rning
With Loin Cords	

View detail

## Submit your questions

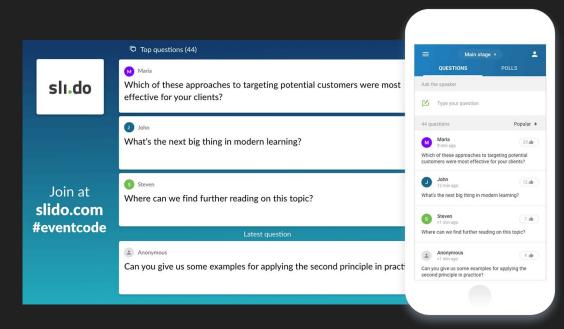
We have set up a sli.do which you can access with the link below

#### https://app.sli.do/event/erak5ql0

Or under **#AMLD\_Physics** on <a href="https://sli.do">https://sli.do</a> and through the corresponding app

You can use this interface to submit questions and vote for the ones you think are most interesting.

We will use this for the panel discussion and during talks.



# Thanks to everyone who made this event possible!

### Organizers:

Sabrina Amrouche, Stefano Carrazza, Frédéric Dreyer, Tobias Golling, Michael Kagan, Maurizio Pierini, David Rousseau, Slava Voloshynovskiy

### Speakers:

Jeremie Abiteboul, Atılım Güneş Baydin, Nadezda Chernyavskaya, Cecilia Clementi, Loic Coyle, Eliska Greplova, Shirley Ho, Charanjit Kaur, Balazs Kegl, Remy Kusters, Gilles Louppe, Eric Metodiev, Evert van Nieuwenburg, Danilo Jimenez Rezende, Fabian Ruehle, Sofia Vallecorsa, Jean-Roch Vlimant, Lenka Zdeborová

AMLD contacts: Sylvain Bernard, Pauline Borg

Posters and participants!