



# Reconstruction and Machine Learning in Neutrino Experiments

## Monday 16 September 2019

### Talks: Reconstruction 1 - Building 1b, SR4b (09:25 - 10:15)

-Conveners: Björn Wonsak

time	[id] title	presenter
09:25	[24] The Pandora particle flow algorithm	Mr SMITH, Andrew
09:50	[25] Reconstructing 3D hit information directly from 2D projections	BACKHOUSE, Chris

### Talks: TRIUMP-Helmholz workshop. Keynote: Perspectives on the Future of Data Intensive Computing - Building 5, Auditorium (10:45 - 11:35)

-Conveners: Oliver Oberst

### Talks: Reconstruction 2 - Building 1b, SR4b (11:45 - 13:00)

-Conveners: Xin Qian

time	[id] title	presenter
11:45	[26] Track Reconstruction and Characterization in Liquid Scintillator Detectors at High Energies	Dr MEYER, Mikko
12:10	[27] Distributed imaging for liquid scintillation detectors	Mr DALMASSON, Jacopo
12:35	[28] Event reconstruction in JUNO	Dr LUO, Wuming

### Talks: Talks: Reconstruction 3 - Building 1b, SR4b (14:30 - 16:00)

-Conveners: Abigail Waldron

time	[id] title	presenter
14:30	[29] TPC Simulation and Signal Processing for LArTPCs	Dr WEI, Hanyu
14:55	[30] Linear system in LArTPC 3D image reconstruction	Dr ZHANG, Chao
15:20	[31] LArTPC Charge-Light Matching and PID with Wire Cell	Dr QIAN, Xin

# Tuesday 17 September 2019

## **Talks: TRIUMPF-Helmholz Workshop. Keynote: How to know, where to look - prioritising in computer vision - Building 5, Auditorium (09:00 - 09:40)**

-Conveners: Simone FRINTROP

## **Talks: Talks: Machine Learning 1 - Building 1b, SR4b (09:50 - 10:45)**

-Conveners: Fatih Bay

time	[id] title	presenter
09:50	[33] Machine Learning techniques on NOvA	GROH, Micah
10:10	[32] Particle Identification Using Convolutional Neural Networks in the NOvA Experiment	Mr MURPHY, Ryan

## **Talks: Talks> Machine Learning 2 - Building 1b, SR4b (11:15 - 12:50)**

-Conveners: Oliver Schulz

time	[id] title	presenter
11:15	[34] Machine Learning Applications in Minerva	Dr GHOSH, Anushree Dr GHOSH, Anushree
11:55	[35] Event Classification using Neural Networks in DUNE	ALONSO-MONSALVE, Saul
12:20	[36] Regression CNN Based Energy and Vertex Reconstruction at DUNE	Prof. BIAN, Jianming

## **Talks: Talks: Machine Learning 3 - Building 1b, SR4b (14:20 - 16:00)**

-Conveners: Jianming Bian

time	[id] title	presenter
14:20	[37] Machine Learning and Computer Vision for Particle Imaging Detectors in Neutrino Experiments	Dr TERAOKA, KAZUHIRO
14:45	[38] Machine learning applications for JUNO	Dr GROMOV, Maxim
15:10	[39] Machine Learning methods in Borexino Experiment	Mr XU, Yu
15:35	[40] Applications of the Topological Track Reconstruction to low energy events	STENDER, Malte

## **Talks: Talks: Machine Learning 4 - Building 1b, SR4b (16:30 - 18:00)**

-Conveners: Joshua Renner

time	[id] title	presenter
16:30	[41] Event identification in the NEXT experiment using CNNs	Dr KEKIC, Marija
16:55	[42] Deep Learning in the EXO-200 experiment	Mr ZIEGLER, Tobias
17:20	[43] ML techniques for the GERDA experiment and beyond	Dr SCHULZ, Oliver

# Wednesday 18 September 2019

## **Talks: Talks: Machine Learning 5 - Building 1b, SR4b (09:00 - 10:50)**

-Conveners: Viktor Pec

time	[id] title	presenter
09:00	[44] Deep Learning in KM3NeT	STELLACCI, Simona Maria
09:35	[47] Measurement of Neutrino Energy Spectra via Deconvolution with IceCube	Dr RUHE, Tim
10:15	[46] Image Based Reconstruction and Deep Learning in MicroBooNE	AN, Rui

## **Talks: Talks: Machine Learning 6 - Building 1b, SR4b (11:20 - 13:00)**

-Conveners: Daniel Bick

time	[id] title	presenter
11:20	[49] Particle tracking based on fully unsupervised disentanglement of the geometrical factors of variation	Dr VLADYMYROV, Mykhailo
11:45	[48] Machine learning in PET imaging with PETALO	RENNER, Joshua
12:10	[50] Closing Words, maybe more	WONSAK, Björn