



# Third MODE Workshop on Differentiable Programming for Experiment Design

## Monday, 24 July 2023

### Applications in Particle Physics: Part 1 (09:20 - 11:00)

-Conveners: Pietro Vischia

time	[id] title	presenter
09:20	[119] Summary of the MIAPbP workshop on Differentiable Programming for Fundamental Physics	HEINRICH, Lukas Alexander
09:50	Discussion	
10:00	[95] Machine learning for particle physics simulations	KANSAL, Raghav
10:20	Discussion	
10:30	[96] Smart pixels with data reduction at source	DICKINSON, Jennet Elizabeth
10:50	Discussion	

# Tuesday, 25 July 2023

## Applications in Particle Physics: Part 2 (09:00 - 10:30)

-Conveners: **Pietro Vischia**

time	[id] title	presenter
09:00	[98] Towards the optimization of a Muon Collider Electrmagnetic Calorimeter	NARDI, Federico NARDI, Federico
09:20	Discussion	
09:30	[106] Cuts and NN - living together in peace	WATTS, Gordon
09:50	Discussion	
10:00	[115] Summary of CaloChallenge	FAUCCI GIANNELLI, Michele
10:20	Discussion	

## Applications in Particle Physics: Part 4 (16:40 - 17:40)

-Conveners: **Ruben Lopez Ruiz**

time	[id] title	presenter
16:40	[128] Toward particle identification in granular calorimeters	AGGARWAL, Aashish DORIGO, Tommaso
17:00	Discussion	
17:10	[109] Energy Regression conditioned on Longitudinal Calorimeter Segmentation	TORALES ACOSTA, Fernando
17:30	Discussion	

# Wednesday, 26 July 2023

## Applications in Particle Physics: Part 3 (11:30 - 13:00)

-Conveners: Pietro Vischia

time	[id] title	presenter
11:30	[97] Gradients of Discrete Stochastic Programs for Detector Design Optimization	KAGAN, Michael
11:50	Discussion	
12:00	[103] ELSA and MadNIS	WINTERHALDER, Ramon
12:20	Discussion	
12:30	[129] The Geant4 particle transport simulation toolkit: differentiable?	NOVAK, Mihaly
12:50	Discussion	

## Applications in Particle Physics: Part 4 (14:00 - 14:30)

-Conveners: Federico Nardi

time	[id] title	presenter
14:00	[133] Ultra-High-Resolution Detector Simulation with Intra-Event Aware GAN and Self-Supervised Relational Reasoning	HASHEMI, Hosein
14:20	Discussion	