

Session Program

8-13 Jun 2025



Fifth MODE Workshop on Differentiable Programming for Experiment Design

Methods and tools

OAC conference center, Kolymbari, Crete, Greece.

Monday 9 June

16:00

Methods and tools

Session | **Location:** OAC conference center, Kolymbari, Crete, Greece. | **Convener:** Lisa Kusch

16:00–16:25 **Differentiable Programming in the Scikit-HEP Ecosystem**

Speaker

Mohamed Aly

16:25–16:30 **Discussion**

16:30–16:55

Differentiable Geant4: Incorporating Multiple Coulomb Scattering for Detector Optimization

Speaker

Jeffrey Krupa

16:55–17:00 **Discussion**

17:00–17:25 **Surrogate models for faster automated design**

Speaker

Carlos Ruiz Gonzalez

17:25–17:30 **Discussion**

17:30

Tuesday 10 June

12:00

Methods and tools

Session | **Location:** OAC conference center, Kolymbari, Crete, Greece. | **Convener:** Long Chen

12:00-12:25

Scaling RooFit's Automatic Differentiation Capabilities to CMS Combine

Speaker

Vassil Vasilev

12:25-12:30

Discussion

12:30-12:55

Bringing Automatic Differentiation to CUDA with Compiler-Based Source Transformations

Speaker

Christina Koutsou

12:55-13:00

Discussion

13:00

Wednesday 11 June

09:00

Methods and tools

Session | **Location:** OAC conference center, Kolymbari, Crete, Greece. | **Convener:** Nicolas Gauger

09:00–09:25

Evaluating Two-Sample Tests for Validating Generators in Precision Sciences

Speaker

Samuele Grossi

09:25–09:30

Discussion

09:30–09:55

Multiscale Inference of Structural Mechanics in Physical Systems

Speaker

Stephen Casey

09:55–10:00

Discussion

10:00–10:25

Differentiable Computation with Awkward Array and JAX

Speaker

Saransh Chopra

10:25–10:30

Discussion

10:30