

Second MODE Workshop on Differentiable Programming for Experiment Design



Contribution ID: 81

Type: Talk

Score-function Optimization \boxtimes for Branching Processes

Thursday, September 15, 2022 4:00 PM (20 minutes)

One of the key difficulties in making HEP differentiable is the highly stochastic and discrete nature of both simulation and reconstruction. While not directly differentiable, gradients of expectation values of stochastic simulator output can be estimated using probabilistic programming and score functions. In this talk I will demonstrate score function based optimization of material maps on a toy particle shower example and discuss possible future directions.

Presenter: HEINRICH, Lukas Alexander (CERN)

Session Classification: Applications in Particle Physics

Track Classification: Particle Physics