



Contribution ID: 1

Type: **not specified**

## Optimizing experiment design with differentiable programming (zoom)

*Thursday, 14 September 2023 11:10 (20 minutes)*

In physics and other disciplines, future experimental setups will be so complex that it will be unfeasible for humans to find an optimal set of design parameters. We parameterize the full design of an experiment in a differentiable way and introduce a definition of optimality based on a loss function that encodes the end goals of the experiment. Crucially, we also account for construction constraints, as well as budget, resulting in a constrained optimization problem that we solve using gradient descent.

In this seminar, I will describe our activities and goals as the MODE Collaboration, focussing on our ongoing work on the optimization of a muon tomography experiment.

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