

## Early Career Researchers & Muon Colliders



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## Towards the optimization of a Muon Collider Calorimeter

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In the context of design studies for a new experimental setup, automatic differentiation can play an important role in helping to find the optimal configuration which meets specified requirements. Setting up a differential pipeline that is able to condensate experimental information into a loss, which is subsequently minimized, allows a global approach to a configuration study, and can provide useful insights to improve performances and reduce costs. I will give a brief overview about an optimization of a Muon Collider Calorimeter. I will discuss the framework structure, analysis tools, as well as the reconstruction techniques applied to simulated data, the results obtained by our methods, and the latest efforts in setting up the full pipeline.

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**Session Classification:** Call for Abstracts: