

Fourth MODE Workshop on Differentiable Programming for Experiment Design



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Automatic optimization of a Parallel-Plate Avalanche Counter with Optical Readout

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We propose an optimization system for a Parallel-Plate Avalanche Counter with Optical Readout designed for heavy-ion tracking and imaging. Exploiting differentiable programming, we model the reconstruction of the position for different detector configurations and build an optimization cycle that minimizes an objective function. We analyze the performance improvement using this method, exploring the potential of these techniques with the ultimate goal of fully designing a tomography system based on neutrons.

Author: PEREIRA, María

Co-authors: Dr VISCHIA, Pietro (Universidad de Oviedo and Instituto de Ciencias y Tecnologías Espaciales de Asturias (ICTEA)); CID VIDAL, Xabier (Instituto Galego de Física de Altas Enerxías)

Presenter: PEREIRA, María

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