

IPAC 2011 Search



[Print](#) [Search](#) [Home](#)

ID: 4198 MAUS: MICE Analysis User Software

Presenter Christopher Douglas Tunnell (JAI, Oxford)

Authors Christopher Douglas Tunnell (JAI, Oxford)

Abstract The Muon Ionization Cooling Experiment (MICE) is unique because it measures accelerator physics quantities using particle physics methods. It follows that the software that forms the theoretical model of MICE needs to be able to not only propagate beam envelopes and optical parameters but also model detector responses and matter effects for cooling. MICE addresses this dichotomy with the software framework MAUS in order to maximize its physics sensitivity whilst providing the conveniences of, for example, a common data structure. The diversity of challenges that MICE provides from the analysis perspective means that appropriately defining the software scope and layout is critical to the correctness and maintainability of the final accelerator physics analyses. MICE has structured its code into a Map-Reduce framework to enable better parallelization whilst also introducing unit, functional, and integration tests to ensure code reliability and correctness. These methods can apply to other experiments.

Funding Agency

Type of Presentation Poster

Main Classification 03 Linear Colliders, Lepton Accelerators and New Acceleration Techniques

Sub Classification A09 Muon Accelerators and Neutrino Factories

1 abstract matched your query.

[New Search](#)

Please contact the [IPAC 2011 Database Administrator](#) with questions, problems, and/or suggestions.

06-JUL-11 14:39 (UTC +01:00)

SPMS Author: Matthew Arena — Fermi National Accelerator Laboratory

JACoW SPMS Version 8.8.6

[JACoW Legal and Privacy Statements](#)