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## **Kassiopeia: A Modern, Extensible C++ Particle Tracking Package**

The Kassiopeia particle tracking framework is an object-oriented software package utilizing modern C++ techniques, originally written to meet the needs of the KATRIN neutrino mass experiment. Kassiopeia features a new algorithmic paradigm for particle tracking simulations which targets experiments containing complex geometries and electromagnetic fields, with high priority put on calculation efficiency, customizability, extensibility, and ease of use for novice programmers. Kassiopeia has been well validated and widely used within the KATRIN collaboration, playing a primary role in several theses and refereed publications. This work presents the latest version, which is already seeing use in the Project8 collaboration and will be released to the larger physics community in the summer of 2014.

**Primary author:** Mr FURSE, Daniel (MIT, for the KATRIN collaboration)

**Presenter:** Mr FURSE, Daniel (MIT, for the KATRIN collaboration)

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