Julia Interfaces to the HepMC3 Event Record Library

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HepMC3.jl provides a Julia interface to the HepMC3 C++ library, the standard for Monte Carlo event records in High Energy Physics (HEP). Leveraging C++ wrapping techniques (CxxWrap), the package grants direct access to the native HepMC3 library functions from within Julia. Aided by tools like **WrapIt** for generating Julia bindings to C++ headers, the package simplifies integration and accelerates development. Currently under active development, HepMC3.jl is progressing through key milestones: initial capabilities include reading HepMC3 ASCII files and accessing fundamental event, particle, and vertex data structures and their properties (like momentum, PDG ID). Development is now focusing on enabling event navigation (vertex relationships, decay chains), handling run-level information (cross-sections, weights), and implementing event modification and creation routines, followed by ASCII serialization. This talk will cover the current status, design choices, and ongoing work in HepMC3.jl, showcasing how it bridges the gap between established C++ tools and modern Julia analysis workflows, aiming to unlock seamless integration of standard event record handling in the Julia HEP ecosystem.

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