

Current Status of AwkwardArray.jl: Advancing Interoperability in High-Energy Physics Workflows

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The integration of diverse programming languages is a key challenge in high-energy physics (HEP), where computational efficiency and flexible workflows are crucial. AwkwardArray.jl, a Julia-based adaptation of the widely used Python Awkward Array library, addresses the need for high-performance manipulation of complex hierarchical data structures. By leveraging Julia's computational advantages, AwkwardArray.jl offers researchers an enhanced toolset for data analysis.

This presentation provides a comprehensive status update on AwkwardArray.jl, including recent development milestones, interoperability advancements, and performance benchmarks. We highlight successful applications within HEP workflows, demonstrating the hybrid usage of Julia and Python in typical analysis workflows. Challenges faced during the integration process will be discussed, alongside future plans for expanding functionality and improving usability.

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