Particle Physics on the Plains 2023



Contribution ID: 23

Type: not specified

Returning CP-observables to the frames they belong

Saturday 14 October 2023 13:15 (18 minutes)

Optimal kinematic observables are often defined in specific frames and then approximated at the reconstruction level. We show how multi-dimensional unfolding methods allow us to reconstruct these observables in their proper rest frame and in a probabilistically faithful way. We illustrate our approach with a measurement of a CP-phase in the top Yukawa coupling. Our method makes use of key advantages of generative unfolding, but as a constructed observable it fits into standard LHC analysis frameworks.

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Session Classification: Collider 1