Contribution ID: **763** Type: **Talk**

Multi-Differential and Unbinned Measurements of Hadronic Event Shapes in e+e- Collisions at sqrt(s)=91 GeV from ALEPH Open Data

Thursday 30 July 2020 13:05 (15 minutes)

First results are presented on the use of a new machine-learning based unfolding technique, OmniFold, applied to archival hadronic e+e- collisions using 730 pbˆ-1 of data collected at 91 GeV with the ALEPH detector at LEP. With the archived data and unfolding procedure, multiple classic hadronic event-shape variables are measured in a fully unbinned and multi-differential manner. Of particular interest, the differential distribution of log one minus thrust is presented and is expected to be helpful for extracting alpha_s via a fit to precision QCD calculations. The analysis is accompanied by a public release of the archived data set and the unfolding results, so that users may make their own versions of plots, either with different binning or with different combinations of observables in a multi-differential distribution. The details of this release are also presented.

Secondary track (number)

Authors: KOMISKE, Patrick (Massachusetts Institute of Technology); METODIEV, Eric (Massachusetts Institute of Technology); THALER, Jesse (MIT); LEE, Yen-Jie (Massachusetts Institute of Technology); BATY, Austin Alan (Rice University (US)); MCGINN, Christopher (University of Colorado, Boulder); BADEA, Anthony (Harvard University (US))

Presenter: BADEA, Anthony (Harvard University (US))

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