Abstract Submitted
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Precision determination of $\alpha_S(m_Z)$ from thrust data RICCARDO ABBATE, Massachusetts Institute of Technology, MICHAEL FICKINGER[1], University of Arizona, ANDRÉ HOANG, University of Vienna, VICENT MATEU, IAIN STEWART, Massachusetts Institute of Technology — I will present an extraction of the strong coupling constant, $\alpha_S(m_Z)$, from thrust data using Effective Field Theory techniques. Our calculation yields one of the most precise measurements of $\alpha_S(m_Z)$ to date. We perform a simultaneous two parameter fit to all available data at energies $Q = 35$ GeV to 207 GeV. We find $\alpha_s(m_Z) = 0.1135 \pm (0.0002)_{\rm expt} \pm (0.0005)_{\rm hadr} \pm (0.0009)_{\rm pert}$, with $\chi^2/{\rm dof} = 0.91$, where the displayed 1-sigma errors are the total experimental uncertainty, the hadronization uncertainty, and the perturbative theory uncertainty, respectively.

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