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Precision Measurement of Charged Hadron Multiplicities in e^+e^- Annihilation at Belle MARTIN LEITGAB, University of Illinois at Urbana-Champaign — Fragmentation functions describe the formation of final state particles from a partonic initial state. Precise knowledge of these functions is a key ingredient in accessing quantities such as the nucleon spin structure in semi-inclusive deep inelastic scattering and proton proton collisions. However, fragmentation functions can currently not be determined from first principles Quantum Chromodynamics and have to be extracted from experimental data. The Belle experiment at KEK, Japan, provides a large data sample at a low energy scale for high precision measurements of hadron multiplicities allowing for first-time or more precise extractions of fragmentation functions. The current status of the measurement will be presented.

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