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Inclusive cross sections for pairs of identified light charged hadrons and single protons from Belle e^+e^- annihilation data

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Inclusive cross sections and azimuthal asymmetries were extracted from e^+e^- annihilation data collected with the Belle detector. These data were taken at the KEKB e^+e^- collider at a center-of-mass energy of around $\sqrt{s} = 10.58$ GeV. The cross sections for single-hadron and hadron-pair production provide very clean information on the spin-independent fragmentation functions, which describe the spin-independent hadronization of quarks into final-state hadrons. The cross-section measurement for single protons extend the earlier measurements of single-pion and single-kaon production, providing new constraints on the fragmentation functions. Measurements of single-hadron cross sections, however, do not distinguish between favored and disfavored fragmentation. Measurements of hadron pairs, where the hadrons are nearly back to back, do provide sensitivity to favored and disfavored fragmentation, thereby providing additional invaluable input for the analysis of the nucleon structure studied in semi-inclusive deep-inelastic scattering and proton-proton collisions. The recent status of the Belle measurement for single-proton cross sections and cross sections for various combinations of pairs of pions and kaons as well as of azimuthal asymmetries will be presented.

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