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Measurement of Spin Dependent Fragmentation Functions in e^+e^- Annihilation at Belle¹

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The so-called Collins fragmentation function connects the transverse quark spin with a measurable azimuthal dependence of the produced hadrons around the quark's momentum axis. Therefore, it can be used as a transverse spin analyzer in semi-inclusive DIS and proton-proton collisions. While in those measurements the Collins function appears convoluted with the so far unknown quark transversity distribution, it is directly accessible in e^+e^- collisions, where one measures a combination of a quark and an antiquark fragmentation function. We present measurements of azimuthal asymmetries for certain charge combinations of hadrons in which it is possible to minimize other systematic effects that could obscure the effect of spin-dependent fragmentation.

¹On behalf of the Belle Collaboration