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Extraction of the Λ Polarizing Fragmentation Function from Belle e^+e^- data

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We present a phenomenological analysis of the experimental data from Belle Collaboration for the transverse polarization of Lambda's measured in e^+e^- annihilation processes, both for the case of associated and inclusive (plus a jet) production. We extract for the first time, within a TMD approach, the quark polarizing fragmentation function for a Lambda hyperon, a distribution giving the probability that an unpolarized quark fragments into a transversely polarized spin-1/2 hadron. Similar analyses in $e\,P \to e\,\Lambda + X$ processes at the EIC will be crucial for understanding the universality and evolution properties of the TMD polarizing FF.

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