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Evolution equations for dihadron fragmentation functions

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We consider dihadron fragmentation functions, that describe the fragmentation of a parton in two (unpolarized) hadrons. Using Jet calculus techniques, we develop evolution equations when these functions are explicitly depending upon the invariant mass of the produced hadron pair, the socalled extended dihadron fragmentation functions. We connect our results to the integrated dihadron fragmentation functions and we establish a formal correspondence with the (extended) fracture functions in the space-like domain. Our results can be used in the analysis of (spin) asymmetries in the azimuthal distribution of final pion pairs, particularly for semi-inclusive deep-inelastic scattering on transversely polarized targets, where extended dihadron fragmentation functions represent a convenient analyzing power to extract the quark transversity distribution.

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