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NLP Endpoint Factorization and Resummation for Off-Diagonal Channels

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The off-diagonal partonic channels do not contribute at leading power in hard scattering but appear first at next-to-leading power (NLP). In contrast to the diagonal channels, leading logarithms are already non-trivial and resummation requires new, refined methods. Techniques developed at leading power cannot be readily utilized since endpoint divergences spoil NLP factorization. In four dimensions, NLP factorization formulae are only well defined after careful treatment of the endpoint regions.

We present a factorization formula, which is free of endpoint divergences in four dimensions. This factorization formula allows us to resum next-to-leading-power logarithms with (almost) standard RGE methods.

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