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A framework for High Energy Factorisation matched to parton showers

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High Energy Factorisation was applied so far almost exclusively to Deep Inelastic Scattering process, as computing gauge invariant matrix elements with off shell external legs is a highly non trivial task. In recent years, this problem has been completely solved in a variety of ways, both analytically and numerically. The times are mature to produce the first phenomenological predictions.

We present the first framework to produce predictions for hadron colliders based on matching off shell gauge invariant matrix elements in the High Energy Factorisation kinematics and for any Standard Model process to the parton showers implemented in the CASCADE program.
We then discuss predictions for multi-jet phenomenology, with a special focus on the description of ATLAS and CMS data for inclusive four-jet production with and without Multi Parton Interactions.

Experimental Collaboration

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