

## Medium-induced radiation beyond the Poisson Approximation

We present a novel technique for the calculation of the probability for emission of an arbitrary number of gluons radiated from a high- $p_T$  probe of the QGP. Our work is an extension of the maximal helicity violating (MHV) method in which the usual soft-collinear factor is classified according to its symmetry under gluon permutations.

For the purposes of illustration, we show the explicit form of the result for from 1 to 3 gluon emissions and present the general expression for any generic “ $n$ ” numbers of gluons. In particular, we compute for the first time the QCD corrections to the multi-gluon Poisson approximation. Our results will prove invaluable to leading particle and jet energy loss modellers.

### I intend to submit my contribution for the proceedings

Yes

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