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The LPM Effect in Sequential Bremsstrahlung

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Energy loss of very high energy particles traversing a medium is dominated by the splitting processes of hard bremsstrahlung and pair production. These splitting processes are coherent over large distances, leading to a suppression known as the Landau-Pomeranchuk-Migdal (LPM) effect, relevant to both jet energy loss in quark-gluon plasmas and the evolution of cosmic ray showers. In the QCD case, there is a potentially important correction to the usual treatment of the LPM effect, arising from cases where the coherence lengths of two consecutive splitting processes overlap. I will (i) outline the physics behind the method for calculating the LPM effect and these corrections, and (ii) briefly summarize the types of results available so far.

Oral or Poster Presentation

Oral

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