

## Massive QCD antenna radiation in medium

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Medium modifications of jets have previously been thoroughly studied by calculating the gluon radiation spectrum off a highly energetic quark traversing a hot and dense QCD medium. But the study of the interference effects, the building block of the QCD jet calculation in vacuum, between different radiators has been missing for quite a long time. In this work we calculate, in the eikonal approximation, the gluon radiation spectrum off a quark-antiquark antenna passing through a deconfined QCD plasma with the masses of the quark and antiquark turned on. The massive quark-antiquark antenna involves both the dead cone effect and the Landau-Pomeranchuk-Migdal (LPM) effect, and takes into account the correlation between both of the emitters leading to an additional strong suppression of gluon radiation at angles smaller than the opening angle of the quark-antiquark pair. Furthermore, the quark-antiquark antenna spectrum is infrared divergent. We calculate the medium-induced energy loss of heavy quarks (charm and bottom) and compare it to well-known results (BDMPS/GLV). The implications on jet quenching observables in heavy ion collisions are also discussed.

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