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Extracting the dead cone effect through heavy flavor data

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The upcoming high-luminosity measurements at RHIC and LHC will generate heavy flavor data with un-precedented precision. How to utilize the high-$p_\perp$ heavy flavor data to analyze the interaction mechanisms in the quark-gluon plasma? For this, we employ our recently developed DREENA framework based on our dynamical energy loss formalism. We will propose: i) How to disentangle the relevance of different energy loss mechanisms (i.e., radiative and collisional energy losses) at the same dataset. ii) Novel observables sensitive to these different mechanisms to be tested by future high-precision experiments. iii) Demonstrate, analytically and numerically, that the mass hierarchy/dead cone effect in energy losses can be readily extracted through these observables.

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