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Quantitative Predictions of Heavy Flavor Photon Bremsstrahlung in Heavy Ion Collisions from AdS/CFT

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We present quantitative predictions for the spectra of photon bremsstrahlung from heavy quarks propagating through a strongly-coupled quark-gluon plasma using the techniques of AdS/CFT. The spectra are the result of including both drag and diffusion terms in the heavy flavor propagation in the plasma. The predictions show that future experimental upgrades and high-luminosity runs at the Large Hadron Collider at CERN will allow for a quantitative comparison between data and our calculations, providing novel insight into the non-trivial, emergent many-body dynamics of a non-Abelian gauge theory.

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