

# 12th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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## The imprints of hydrodynamics in jet quenching

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In this talk, we present a novel extension to the theory of jet quenching, incorporating the effect of both the flow and anisotropy of matter undergoing hydrodynamic evolution. The interplay between these two vectorial magnitudes results in a significant rescaling of fundamental objects, like the jet quenching parameter. Depending on the relative direction of the two vectors, the energy loss gets severely modified. The new contribution is not subleading in energy, and thus it could transform our understanding of jet-medium interactions drastically. First, we show the effect of this interplay for both the jet momentum broadening and medium induced branching, treating the interaction within the opacity expansion. We further discuss the extension to the dense regime and the resummation of multiple scatterings. Finally, we discuss phenomenological implications that the presented results have for a realistic imaging of the QGP created in HICs.

### Category

Theory

### Collaboration

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