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QGP Tomographic Prospects from Photon-Jet Acoplanarities[1]
JOSEPH BAHDER, New Mexico State University — We discuss a new photon-jet acoplanarity observable we label Jet Drift and demonstrate its use as a tomographic instrument capable of recovering information about the velocity fields of the Quark-Gluon Plasma. We discuss the fundamentals of the observable and the geometric coupling of its jet production angle dependence with the velocity field of the medium. Numerical simulations are presented to evaluate the ability to reconstruct this dependence from event-by-event correlation analysis in real-world experiments at present and future facilities. Finally, a brief discussion of the detectability of the effect motivates further investment in anisotropic observables as tools for model differentiation and QGP tomography.

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