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Unravelling Medium Effects in Heavy Ion Collisions with Zeal

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Strong medium effects seen in the suppression of R_{CP} in RHIC data are also visible in the recent LHC data. Constructing jets explictly in heavy ion collisions, similar ratios for jets have also been constructed, and display suppression as well. The latter are theoretically more appealing for studies of jet quenching. However, the corresponding results appear to depend on cone radius, and perhaps background subtraction. We propose a new observable, called zeal, to characterize jets for analysis in heavy ion collisions. Zeal measures how the thermal medium affects the multiplicity and distribution of energetic particles in a jet, and is designed to be minimally dependent on cone radii or the underlying background. Toy models are used to illustrate these properties.

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