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Jet Quenching Puzzles at RHIC

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Jet quenching is a unique short wavelength probe of the strongly coupled quark gluon plasma (sQGP) produced at RHIC. Recent data on the azimuthal dependence of jet quenching as a function of centrality and on heavy quark attenuation patterns at high transverse momenta have posed interesting new challenges for jet tomography theory[1]. Prediction for (Au+Au and Cu+Cu) will be confronted with the available data. Possible new physics implications of the outstanding puzzles will be discussed. [1] M. Gyulassy, I.Vitev, X. N.Wang and B.W.Zhang, Quark gluon plasma III, (Hwa, R.C. (ed.) et al.,p.123), (nucl-th/0302077)