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## Jet broadening and photon production in a viscous Quark-Gluon Plasma

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Relativistic heavy-ion collisions form a quasi-free system of quarks and gluons known as Quark-Gluon Plasma (QGP). In addition to the formation of the QGP, these collisions also create high-momentum quarks and gluons, which will subsequently radiate a collimated spray of particles called a jet. The dynamical evolution of jets is well understood in electron-positron as well as proton-(anti) proton collisions; thus, jets act as a calibrated probe to study the QGP. The scattering rate of quarks and gluons in the jets within an inviscid (ideal) and viscous QGP fluid will be computed, allowing the use of jets to constrain the viscosity of the QGP. The theoretical formalism developed herein will be extended to study high-energy photon production within ideal and viscous QGP.

## Keyword-1

Quark-Gluon Plasma

## Keyword-2

Jets

## Keyword-3

Photon Production

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