

# Single photons from relativistic heavy ion collisions

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Photons have remained one of the most reliable probes of all events; celestial or terrestrial. Relativistic heavy ion collisions being studied with the intent of producing and characterising quark gluon plasma are no exception. As they are only weakly interacting and as they are produced at every stage of the collision they provide accurate information about the point of their production.

After a brief discussion of the sources of photons, we discuss the results at SPS energies. Next, we discuss the new source of photons; due to passage of energetic partons through the quark gluon plasma, which could dominate the production of photons at high transverse momenta and provide results complimenting those from the jet-quenching studies for RHIC and LHC energies. The data obtained at RHIC energies are then shown to indicate an initial partonic system at  $T \sim 300\text{-}500$  MeV, and to indicate a presence of the jet-photon conversion mechanism.

Next we show that elliptic flow of thermal photons could trace the development of the flow in the system, which should be very valuable, as it is the most direct observation of the flow from the partonic phase. All these results coupled with the possibility of intensity interferometry, to decipher evolution of the system from the earliest stage, makes them a very powerful probe. An spectacular display of their prowess is guaranteed at LHC.