

Thermal photon emission from hydrodynamics in heavy-ion collisions

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In ultrarelativistic heavy ion collision a strongly interacting medium is formed. Electromagnetic probes are particularly interesting in these collisions, because they can escape from the strongly interacting system without any further interactions. Thus electromagnetic measurements can provide information about the initial state and expansion phase of the collisions. In this talk I will concentrate on thermal photon emission from the medium, which is modeled using relativistic fluid dynamics.

Special emphasis will be given for the recent event-by-event hydrodynamical studies where the initial state density fluctuations are taken into account. Another part of my talk will be the elliptic flow of thermal photons and this area of research is currently at a very interesting phase, because us theorists cannot understand the direct photon elliptic flow measurements performed recently by the PHENIX and ALICE collaborations. I will give some insight why the measurements cannot be currently understood from the theory.