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Heating triangle singularities in heavy ion collisions

We predict that triangle singularities of hadron spectroscopy can be strongly affected in heavy ion collisions. To do it we examine various effects on the singularity-inducing triangle loop of finite temperature in the terminal hadron phase.

It appears that peaks seen in central heavy ion collisions are more likely to be hadrons than rescattering effects under two conditions. First, the flight-time of the intermediate hadron state must be comparable to the lifetime of the equilibrated fireball (else, the reaction mostly happens in vacuo after freeze out).

Second, the medium effect over the triangle-loop particle mass or width must be sizeable.

When these (easily checked) conditions are met, the medium quickly reduces the singularity: at T about 150 MeV, even by two orders of magnitude, acting then as a spectroscopic filter.

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Collaboration / Activity

Theory

First author

Email

Primary authors: ABREU, Luciano M. (Univ. Federal da Bahia); LLANES-ESTRADA, Felipe J. (Universidad Complutense de Madrid, dept. Fisica Teorica)

Presenter: LLANES-ESTRADA, Felipe J. (Universidad Complutense de Madrid, dept. Fisica Teorica)

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