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The Power Spectrum of Heavy Ion Collisions

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Using features from Cosmic Microwave Background (CMB) analysis, we calculate the angular power spectrum of central heavy ion collisions at $\sqrt{s_{NN}} = 5.02\mathrm{TeV}$. The idea is to treat the particles' angular distribution like the background radiation originated from the recombination epoch of the early Universe. In practice, detector deficiencies and lack of full pseudorapidity (η) coverage introduce artificial structures to the power spectrum, which are related only to the geometric cuts, i.e. to the η range. We clarify this issue in order to determine what is the true power spectrum of an ideal detector. One can thus finally discover which properties of the Quark Gluon Plasma (QGP) can be seen through this type of analysis.

Content type

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