

# Temperature Fluctuation and the Specific Heat in Au+Au Collisions at $\sqrt{s_{NN}} = 7.7 - 200$ GeV

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Specific heat is a thermodynamic quantity that characterizes the equation of state of the system. For a system undergoing phase transition, the specific heat,  $C_V$ , is expected to diverge at the critical point. Temperature fluctuation of the system provides an estimation of  $C_V$ . The specific heat can be extracted from event-by-event temperature fluctuation. Thus the variation of thermal fluctuations with temperature can be effectively used to probe the QCD phase transition and QCD critical point.

In this talk, we will present the energy dependence of specific heat and temperature fluctuations of the QCD matter created in Au+Au collisions at  $\sqrt{s_{NN}} = 7.7, 11.5, 19.6, 39, 62.4$  and 200 GeV from STAR and compared with model calculations.

## Abstract Type

Poster

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