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## Incident Energy Dependence of Transverse Momentum Correlations in Au+Au collisions at $\sqrt{s_{NN}} = 7.7 - 200$ GeV in STAR

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It has been proposed that one signal of the critical point could be a non-monotonic change in the value of transverse momentum ( $p_t$ ) correlations as a function of centrality and/or incident energy [1]. Accordingly, we present results for two-particle  $p_t$  correlations as a function of event centrality for Au+Au collisions at  $\sqrt{s_{NN}} = 7.7, 11.5, 19.6, 27, 39, 62.4$  and 200 GeV at RHIC, extending our previous work [2] to lower incident energies. The  $p_t$  correlations will be calculated as a function of centrality and collision energy. We will study the energy dependence of the square root of the correlations ( $\sqrt{\Delta p_{t,i} \Delta p_{t,j}}$ ) divided by the event-wise average transverse momentum per event ( $\langle\langle p_t \rangle\rangle$ ). These results will be compared to measurements from other experiments as well as UrQMD model calculations.

[1] H. Heiselberg, *Phy. Rep.* 351, 161 (2001)

[2] STAR: *Phys. Rev. C* 72, 044902 (2005)

[3] ALICE data: Stefan Heckel, *Quark Matter 2011*

[4] D. Adamova et al. [CERES Collaboration], *Nucl. Phys. A* 727, 97 (2003)

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