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## Limiting fragmentation in heavy-ion collisions at RHIC and LHC energies

*Friday 16 July 2021 14:50 (20 minutes)*

We investigate the validity of the limiting-fragmentation hypothesis and its centrality dependence in relativistic heavy-ion collisions at energies reached at the Relativistic Heavy Ion Collider (RHIC) and the Large Hadron Collider (LHC).

A phenomenological analysis of Au-Au and Pb-Pb collisions within a three-source relativistic diffusion model (RDM) is performed at  $\sqrt{s_{NN}} = 19.6, 62.4, 130, 200, 2760$  and  $5023$  GeV using four centrality cuts at each energy. Linear and nonlinear expressions for the rapidity drift function are tested and their physical relevance is discussed. Our results are compatible with the limiting-fragmentation conjecture for the investigated centralities in the full energy range. However, data in the fragmentation region are not yet available at LHC energies. The number of particles in the fragmentation and fireball sources are found to depend on  $\sqrt{s_{NN}}$  logarithmically and cubic-logarithmically, respectively.

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### Preferred track

Forward & Diffractive Physics

**Primary author:** Prof. WOLSCHIN, Georg (Heidelberg University)

**Presenter:** Prof. WOLSCHIN, Georg (Heidelberg University)

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