

Survival Probabilities at LHC in mini-jet and other models

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Recent results for the total, elastic and inelastic hadronic cross-section from LHC experiments will be compared with predictions from one-channel eikonal mini-jet models, with QCD calculations from Durham and Tel Aviv groups, and with empirical models based on Regge-type parametrizations, adequately implemented with the very small $|t|$ behavior. The role of soft gluon resummation in the infrared region in taming the rise of mini-jets in their contribution to the increase of the total cross-sections at high energies will be discussed in the context of our proposed BN model. Recent observations such as the edge and the hollowing “effect” in impact-parameter distributions will be discussed and compared with expectations from our model. Survival probabilities at LHC will be estimated and compared with our 2008 results and recent calculations by different authors, which range from circa 10% to a few permille. We clarify the origin of some such discrepancies.

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