

Is there diffraction dissociation of nuclear nucleons in nucleus-nucleus interactions

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In nucleon-nucleon collisions there are processes: diffraction dissociations of projectile nucleon (PrD), dissociation of target nucleons (TrD), meson exchange processes (ME) and non-diffractive interactions. Correspondingly, $\sigma^{in} = \sigma_{PrD} + \sigma_{TrD} + \sigma_{ME} + \sigma_{ND}$. Perhaps there is only one possibility to estimate these cross sections in reggeon approach. According to the approach, σ_{ME} fast decreases with energy growth. σ_{PrD} and σ_{TrD} growth logarithmically as the elastic cross section. σ_{ND} has a weak logarithmical growth. Multiplicities of produced particles in the processes are related as $M_{ME} < M_{PrD}$, $M_{TrD} < M_{ND}$. In nucleus-nucleus (AA) interactions these relations and their energy dependences can be changed. If one neglects PrD and TrD processes, $\sigma^{in} \simeq \sigma_{nd}$, multiplicities of produced particles will be overestimated. In other case, the multiplicities will be underestimated. These limiting situations are implemented in various Monte Carlo event generators. In the present report, we propose a "soft" scheme of accounting of the diffraction processes in AA interactions. As a result, we have an acceptable description of experimental data of NICA BMN and NA61/SHINE collaborations (at higher energies). Details of the scheme will be considered in the report.

Section

Heavy ion collisions at Intermediate and high energies

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