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Multiplicity Distributions and Modified Combinants in the Multipomeron Model of pp Interaction at High Energies

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The multiplicity distributions of charged particles and their combinants for pp collisions at LHC energies are studied within the Multipomeron Exchange Model (MEM) that takes into account the phenomenon of string fusion. It is shown that the use of Gaussian-type distributions for multiplicity distributions at a fixed number of pomerons allows, within the MEM framework, the reproduction of the resulting multiplicity distributions and the oscillatory behavior of combinants, found in the ALICE and CMS pp collision data at LHC energies. It is important that in the proposed approach, the parameters of these Gaussian-type distributions are not considered free, but are calculated from the two-particle correlation function of a single string. The role of diffraction processes in the behavior of combinants is discussed.

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