quark fragmentation and particale production athigh energy

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-The inclusive spectra of particle production inhadron-hadron Chh) and hadron nucleus ChA) collisions have been calculated in the frame work of string model. This model proposed that the color exchange between the projectile and target nucleons leads to the formation of color strings which are assumed to fragment like strings formed in deep inelastic lepton nucleon scattering.The total inelastic hadron nucleus collision has been calculated for light nuclei CIA, Be, C). Good agreement between experimental data and these calculations wasobtained. Also, it was proven that, no big difference is seen if the target nucleons are distributed according to a iparticles.- - -The invariant inclusive cross section in the projectilefragmentation region is described, consistently andparameterfree, in collisions of the type:h A 11$ Xwhere hep, n+ and h'°-n+, n7 K0, A, A and p.A is the target nucleus Cp, Be, C, Al, Cu, Pb).X is the residual nucleus.The momentum of the incident hadron was taken as 100, 200, 300 and 400 GeV/C. An overall good agreement between theGaussian model or the oscillator model for independentpresent calculations and the available experimental data was obtained.The thesis contains three chapters. The first one discusses the input information of the used model such as the structure function of partons and fragmentation functions. Also, the formulae used in calculating-the tutal -ineJra.stin hadron nucleus ChAD cross section has been derived. Chapter 2 includes a brief account ofthe previous work and the basic assumptions of the used model and its mathematical perscriptions. Chapter3 includes the calculated results in this thesis and a consequent comments with the available experimental data.In addition, the thesis contains two appendices. The first showthe calculation of the integration:cdvCz) e-lwz dzwhere dv(z) is the valence quark structre function of the proton. Appendix B contains a detailed description of the program used in the computer.