

TEST OF HADRONIC INTERACTION MODELS WITH THE KASCADE HADRON CALORIMETER

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The interpretation of extensive air shower (EAS) measurements often requires the comparison with EAS simulations based on high-energy hadronic interaction models. These interaction models have to extrapolate into kinematical regions and energy ranges beyond the limit of present accelerators. Therefore, it is necessary to test whether these models are able to describe the EAS development in a consistent way.

By measuring simultaneously the hadronic, electromagnetic, and muonic part of an EAS the experiment KASCADE offers best facilities for checking the models. For the EAS simulations the program CORSIKA with several hadronic event generators implemented is used. Different hadronic observables—e.g. hadron number, energy spectrum, lateral distribution—are investigated, as well as their correlations with the electromagnetic and muonic shower size. By comparing measurements and simulations the consistency of the description of the EAS development by the hadronic interaction models is checked. First results with the new interaction model NEXUS and the version 2.5 of the DPMJET model, recently included in CORSIKA, will be presented and compared with QGSJET simulations.