

The CORSIKA 8 project and Pythia 8 as hadronic interaction model in air shower simulations

The CORSIKA 8 project aims to provide a modular, flexible, and comprehensive framework for the simulation of particle cascades in air and other media. Recent developments include the integration of the PROPOSAL code as electromagnetic interaction model, implementations of the Zas-Halzen-Stanev (ZHS) and CoREAS algorithms for simulations of radio emission, and the introduction of thinning. In this contribution, we give a status report of the project, present an overview of the current capabilities, and give an outlook to future developments.

As a highlight, we show first results using Pythia 8 as hadronic interaction model in UHECR air shower simulations, which since its latest version 8.307 offers a number of features that make it usable as such. Among them are the ability to produce events with arbitrary energies and projectiles without a time-consuming re-initialization as well as a simplified treatment of nuclear targets. Additionally, the extended energy range of usability down to 200 MeV (lab) eliminates the need of a supplementary low-energy interaction model.

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