CORSIKA below the knee

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Recently, there has been an increased interest in small-scale EAS experiments designed to satisfy young people's scientific curiosity and develop their interest in science. It is worth noting that networking these arrays creates opportunities to pose and solve serious physical problems. The particle flux on the ground, due to the steep cosmic ray spectrum, is dominated by particles from small and very small showers. Quantitative interpretation of showers recorded by small local arrays requires different methodology than that used by ordinary big EAS arrays operating in the 'knee' region and above. Showers observed by several small detectors placed closely together and operating in coincidence cannot be effectively localized, their arrival directions cannot be reliably determined and their sizes cannot be estimated with reasonable accuracy. To draw physical conclusions from such events, a proper simulation tool is needed to determine, in a reasonable time, the registration rates of particular configurations triggered mostly by secondary particles created in interactions of primary cosmic rays with very low energies. The CORSIKA program was created (30 years ago) for the KASCADE experiment for PeV energies. Since then, the program has been greatly expanded and enhanced and becomes one of the primary tools for shower simulations up to the highest observed energies. It can be used for calculations in TeV region, but its suitability here is debatable, mostly because of computational time required. We present "small EAS generator", semi-analytical method for integrating cosmic ray spectra over energies and angles of interest and summing over mass spectra of primary nuclei in arbitrary detector configurations. Results on the single muon flux and particle density spectra will be given.