

TANGO ARRAY II: SIMULATIONS

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The angular and energy resolution of the TANGO Array has been obtained using Monte Carlo simulations. The AIRES code, with the SYBILL hadronic collision package, was used to simulate Extended Air Showers produced by primary cosmic rays (protons and iron nuclei), with energies ranging from 10^{14} eV to 10^{18} eV. These data were fed into a realistic code which simulates the response of the detector stations (water Čerenkov detectors), including the electronics, pick up noise, and the signal attenuation in the connecting cabling. The trigger stage is taken into account in order to produce estimates of the trigger efficiency of the array and to check the accuracy of the reconstruction codes. This paper describes the simulations performed to obtain the expected behavior of the array, and presents the simulated data. These simulations indicate that the accuracy of the cosmic ray primary energy determination is expected to be ~ 60 % and the precision in the measurement of the direction of arrival is estimated as ~ 4 degrees.