

Abstract Submitted
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The Surface Enhancement of IceCube¹ ALAN COLEMAN, University of Delaware, ICECUBE COLLABORATION COLLABORATION — IceTop is a cosmic ray (CR) air shower detector, located at the South Pole, and is part of the IceCube Neutrino Observatory. The current array consists of ice-Cherenkov tanks and covers roughly 1 km². Currently, IceTop is undergoing an enhancement to include new detector types, scintillator panels and radio antennas. This addition will increase the science capabilities of the IceCube surface array. The scintillator panels will allow for the calibration of the snow overburden on the tanks. The accumulation of snow is a source of systematic uncertainty and reduces the detection efficiency of CRs with energies below ~ 1 PeV. The new array will be sensitive to CR primaries above a few hundred TeV, extending the energy range of the Observatory. With the observation of Xmax by the antennas and the additional information from the scintillators, the multi-detector method will also improve the energy resolution and the CR-mass discrimination, a requirement for the field to make significant progress. I will present the first results from the prototype station and the plans and outlook for the full-scale array.

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