

Exploring calorimetry new dimensions: a novel approach to maximize the performances of space experiments for high-energy cosmic rays.

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Calorimeters are the key detectors for future space based experiments focused on high-energy cosmic rays spectra measurements.

Thus it is extremely important to optimize their geometrical design, granularity and absorption depth, with respect to the total mass of the apparatus, which is among the most important constraints for a space mission. Calocube is a homogeneous calorimeter whose basic geometry is cubic and isotropic, so as to detect particles arriving from every direction in space,

thus maximizing the acceptance; granularity is obtained by filling the cubic volume with small cubic scintillating crystals.

A prototype, instrumented with CsI(Tl) cubic crystals, has been constructed and tested with particle beams. An overview of the obtained results will be presented and the perspectives for future space experiments will be discussed.

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