



Contribution ID: 674

Type: **Poster contribution**

Developments of a new mirror technology proposed for the Cherenkov Telescope Array

Tuesday, 4 August 2015 16:00 (1 hour)

The Cherenkov Telescope Array (CTA) very high-energy gamma-ray observatory will consist of about a hundred of imaging atmospheric Cherenkov telescopes (IACTs) of different sizes, with a total reflective area of about 10,000 m². Here we present a novel technology for the production of IACT mirrors that has been developed in the Institute of Nuclear Physics PAS in Krakow, Poland. The mirrors are made by cold-slumping of both the front, reflective aluminium-coated panel and the rear panel, which are then interspaced with aluminium spacers. Each panel is built of two glass panels laminated with a layer of a fiberglass tissue in between for reinforcement of the structure against mechanical damage. The mirror structure is open and does not require the perfect seal needed in closed-type designs. This design prevents the trapping of water inside the structure and enables proper ventilation of the mirror. Full-size hexagonal prototype mirrors produced for the medium-sized CTA telescopes will be presented, together with the results of recent comprehensive optical and durability tests. Their design will be compared to the earlier technology developed at INP PAS that used a rigid flat open support structure with a reflective layer made by cold-slumping of the coated glass panel to the cast-in-mould spherical epoxy resin layer.

Collaboration

CTA

Registration number following "ICRC2015-I/"

598

Primary author: MICHALOWSKI, Jerzy (High Energy Department)**Co-authors:** NIEMIEC, Jacek (Institute of Nuclear Physics PAS); Mr SOWINSKI, Maciej (Institute of Nuclear Physics PAS); Dr STODULSKI, Marek (Institute of Nuclear Physics PAS); DYRDA, Michal (Institute of Nuclear Physics PAS)**Presenter:** DYRDA, Michal (Institute of Nuclear Physics PAS)**Session Classification:** Poster 3 GA**Track Classification:** GA-IN