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First results on the two square meters multilayer glass composite mirror design proposed for the Cherenkov Telescope Array developed at INFN

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The Cherenkov Telescope Array (CTA) is a future ground-based gamma-ray astronomy detector that will consist of several tens of

Imaging Atmospheric Cherenkov Telescopes of different sizes. The total reflective surface of roughly 10,000 m² requires unprecedented technological efforts towards a cost-efficient production of light-weight and reliable mirror substrates at high production rate.

We report on a new mirror concept proposed for CTA developed by INFN, which is based on the replication from a spherical mold under pressure.

The mirror substrate is an open structure design made by thin glass layers at the mirror's front and rear interspaced by steel cylinders.

A first series of nominal size mirrors has been produced, for which we discuss the optical properties in terms of radius of curvature and focusing power.

Collaboration

CTA

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