

CAST physics achievements and perspectives

Friday 24 June 2011 09:50 (50 minutes)

The CERN axion helioscope CAST will be presented, along with its results and the achievements reached so far. In addition to the inspiring direct solar axion search, the recently arisen new perspectives towards searching for particle candidates from the Hidden sector ('paraphotons') and also for the dark energy in cosmos ('chameleons'), both of solar origin, will be presented; their detection follows from CAST's working principle and its configuration. The necessary upgrades to enter into new territories imply mainly detectors with less background and / or sub-keV energy threshold. The potential of transforming CAST into a relic axion antenna is being currently investigated, with the aim being to cover the otherwise inaccessible 0.1 to 1meV relic axion rest mass range.

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