# Water Cherenkov Detector to study solar events

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# **Coronal Mass Ejection**



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#### Detection

### TANCA – Cherenkov Tank of Campinas



Figure – Picture • With 11.400 liters of ultrapure and of the Cherenkov deionized water inside an hermetic bag. Tank of

 Has 10 m<sup>2</sup> in área, with 1.14 m in height of water. Teorecally, 1600 muons pass by the detector each second.

• For the Cherenkov fotons detection, 3 photomultipliers XP180 from Photonis with 9 inches are used.



Campinas

(TANCA)

#### Difficulties on each event



Figure – WSA-Enlil Simulation for solar eventos. (Left) 27/02/2016 17:00h. (Right) 14/03/2016 20:00h



Figure – (Left) Data confrontation between McMurdo and Dst. (Right) Confront between McMurdo and TANCA.

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#### The event



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#### Tanca vs Dst



Figure – Tripla coincidence - TANCA (blue) vs Dst (red) by the UTC time

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#### Future analysis for TANCA

## Ciclo solar 25



Figure – Solar Cycle 23 e 24 observed on the Neutrons do McMurdo variation (blue) and number of solar sunspots (black).

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