Cosmic ray intensity measurements at the Geophysical Center of Dourbes

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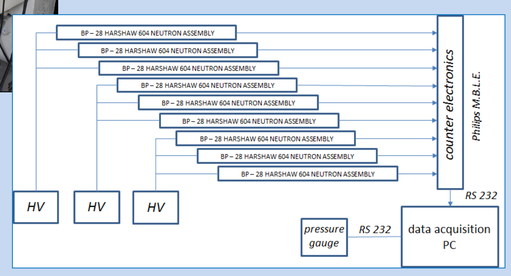
Cosmic Radiation (CR) reflect changes in the interplanetary and interstellar space which modulates the intensity of the measured secondary particles – neutrons.

The Royal Meteorological Institute
Geophysics Centre at Dourbes
CR station at Dourbes, Belgium

since 1965

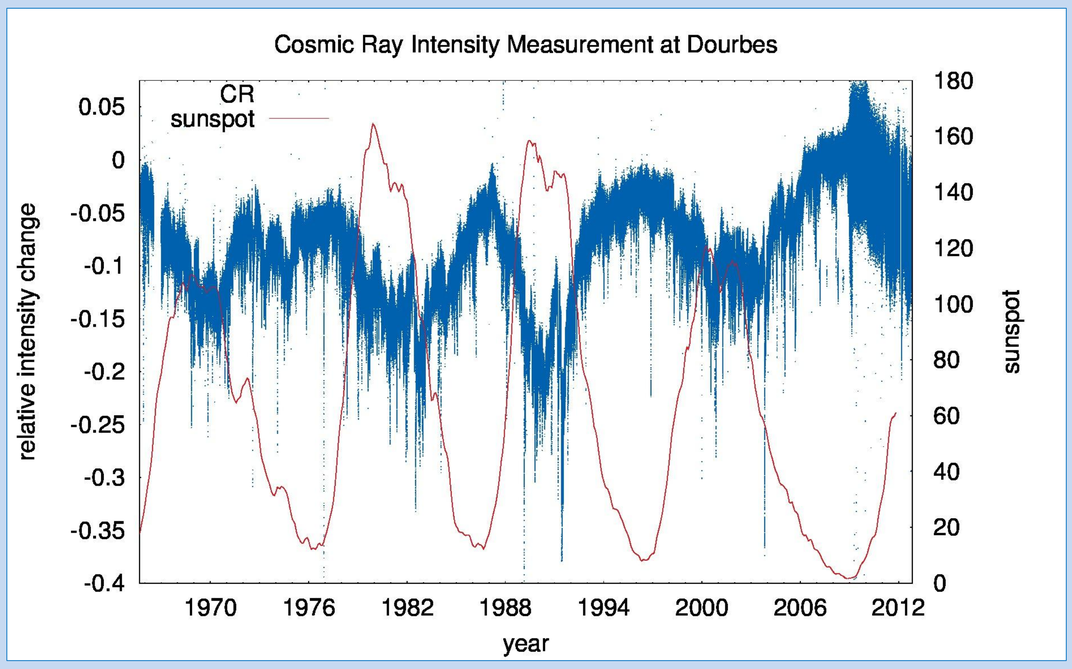
4.6°E, 50.1°N

9 BP-28 Harshaw
Type 604 BF_3 neutron monitor

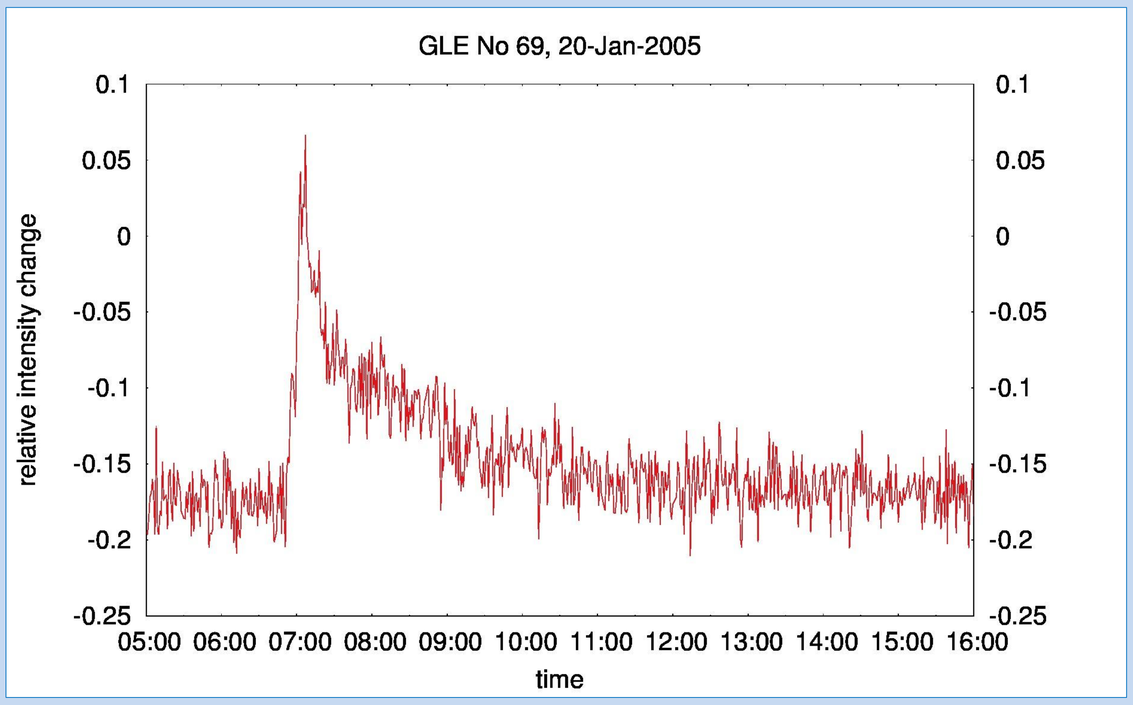


data acquisition with resolution of 1 min

Intensity modulation by the solar cycles

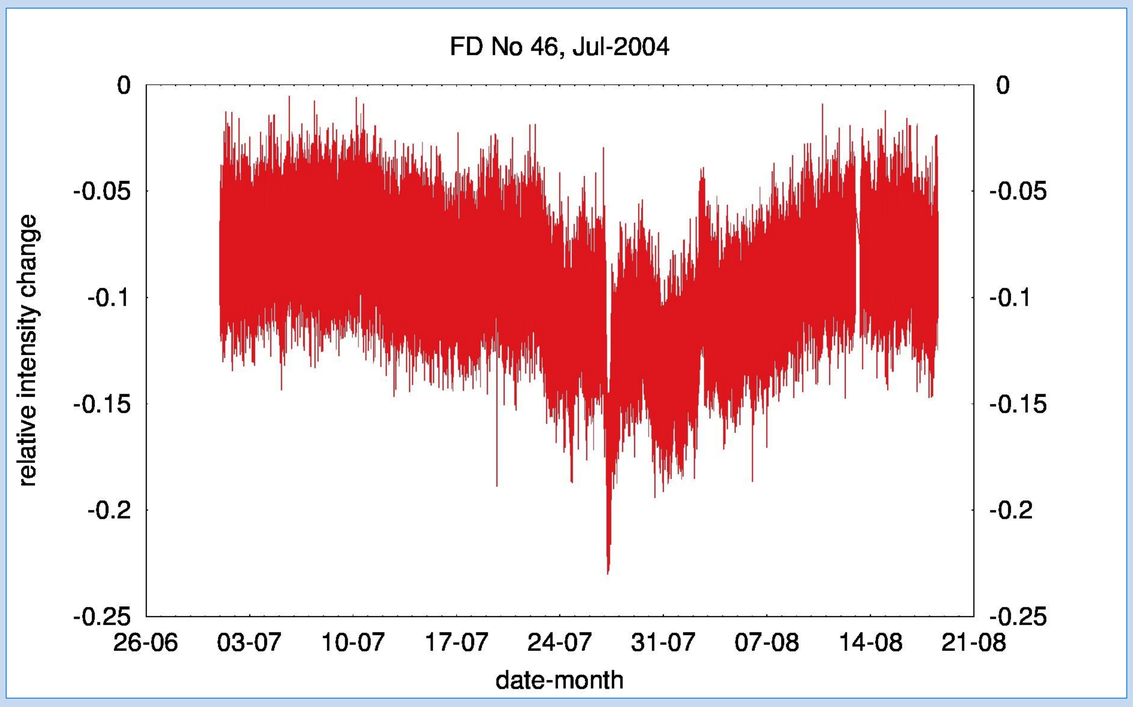


Cosmic radiation observations are a direct result from changes in the Space Weather:



Ground Level Enhancement (GLE) : events are the sharp increase in the intensity of the Galactic Cosmic Rays due to high energetic solar particles, coming from ***Solar Flares***. The 1 minute resolution facilitates peak recording and event identification. **Provides an early detection of an Earth-directed proton events.**

Forbush Decrease (FD) events , a consequence of coronal mass ejections (CME); depend on the proximity, the magnitude and the size of the CME. It is observed as suppression in the intensity of the cosmic ray by 3 to 20 % at the ground based stations due to the shock and the magnetic cloud.
The Forbush Decrease onsets with the arrival of the Coronal Mass Ejection shock.



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