

Name of research institute or organization:

Physikalisches Institut, Universität Bern

Title of project:

SONTEL – Solar Neutron Telescope for the identification and the study of high-energy neutrons produced in energetic eruptions at the Sun

Project leader and team:

Dr. Rolf Bütikofer

Project description:

The solar neutron telescope (SONTEL) at Gornergrat, Switzerland, has been in continuous operation since 1998 as the European cornerstone of a worldwide network for the study of high-energy neutrons produced in energetic processes at the Sun. The network consists of seven solar neutron telescopes that are located at high altitudes and at low to mid latitudes (short path through atmosphere) as well as at different longitudes.

SONTEL Gornergrat was in continuous operation during 2013, with only some short data gaps caused by electrical power outages. The monthly mean sunspot numbers in 2013 remained below the values expected from previous solar activity cycles. None of the observed solar energetic particle events had the magnitude to be observed by ground level detectors.

The radioactivity measurement with a GammaTracer device inside the detector housing of SONTEL was continued. In 2013 the GammaTracer device had to be revised (change of battery and recalibration). As the detector is operated inside a housing with a connection for power supply, we rebuilt the GammaTracer in such a way that it is supplied via the RS232 interface.

Key words:

Astrophysics, cosmic rays, solar neutrons

Internet data bases:

<http://cosray.unibe.ch>

<http://www.stelab.nagoya-u.ac.jp/ste-www1/div3/CR/Neutron/index.html>

Collaborating partners/networks:

Prof. Y. Matsubara, Prof. Y. Muraki, Dr. T. Sako, Dr. S. Masuda, Solar Terrestrial Environment Laboratory, Nagoya University, Nagoya 464-8601, Japan

Address:

Physikalisches Institut
Universität Bern
Sidlerstrasse 5
CH-3012 Bern

Contacts:

Rolf Bütikofer

Tel.: +41 31 631 4058

Fax: +41 31 631 4405

e-mail: rolf.buetikofer@space.unibe.ch

URL: <http://cosray.unibe.ch>