

# Study of solar activity by measuring cosmic rays with a water Cherenkov detector

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## Abstract content

We performed a study of solar activity through the Forbush effect, which relates large-scale solar dynamics with the detection of secondary cosmic rays at ground level. The detection of secondary cosmic rays is done by using a cylindrical water Cherenkov detector. The Cherenkov light produced by charged particles from the secondary cosmic radiation is detected by a single photomultiplier located along the axis of the cylinder looking downwards from the top of the water surface. The electronics used to measure the rate of arrival of the secondary cosmic rays makes use of an FPGA and a custom-made ADC card. We measure the rate of arrival of secondary cosmic rays for four different energy thresholds. We describe the correction required to unfold the effect of atmospheric pressure and the data analysis to search for Forbush decreases. We compare our results with those available from major Solar Activity observatories around the Earth.

## Summary

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