



## Space Weather monitoring with Neutron Monitor measurements

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Space Weather affects many areas of the modern society, advance knowledge about space weather events is important to protect personnel and infrastructure. Cosmic ray (CR) intensity measurements are routinely provided by the ground based Neutron Monitors. These measurements are influenced by the passage of the interplanetary counterparts of coronal mass ejections resulting into a significant reduction in the recorded intensity known as Forbush decreases. Furthermore, upon the release of high-energy particles at the Sun during a solar flare or a very energetic coronal mass ejection, the measured intensity can be significantly increased resulting into Ground Level Enhancements (GLEs). By detecting the anisotropy of the CR environment, a CME can be detected hours before it arrives at Earth. During a GLE the high-energy particles from the Sun can be detected before the more abundant lower energy particles arrive at Earth, thus allowing to take protective measures. Since the beginning of the Neutron Monitor Database (NMDB) project, which has been started in 2008 with funding from the European Commission, real-time data from Neutron Monitors around the world has been made available through one web-portal. We have more than

doubled the number of stations providing data since the start of the project to now over 30 stations. The effectiveness of the GLE Alert Service application which is based on NMDB data has been validated in real-time by the recent GLE71 on 17 May 2012. We will present different applications through which the measurements and different data products are accessible.