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Facilities of Athens Neutron Monitor Station (ANeMoS) to Space Weather

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In the frame of the comprehensive knowledge, detection and forecasting of the solar –terrestrial relations as well as space weather events, the ground based measurements of the network of neutron monitor constitutes a vital tool for these studies. This is mainly the reason that Athens Neutron Monitor Station (A.Ne. Mo.S) beyond of the provision of its real time data, has also developed several research applications. More specifically, applications such as a) an optimized automated Ground Level Enhancement Alert (GLE Alert Plus) b) a web interface, providing data from multiple Neutron Monitor stations (Multi-Station tool) and c) a simulation model, named DYnamic Atmospheric Shower Tracking Interactive Model Application (DYASTIMA), which allows the study of the cosmic ray showers resulted when primary cosmic ray particles enters the atmosphere, have been developed. The two first applications are currently federated products in European Space Agency (ESA) and actually available via the Space Weather Portal operated by ESA (<http://swe.ssa.esa.int>). On the other hand, the contribution of the simulation tool DYASTIMA, based on the well known Geant4 toolkit, to the calculations of the radiation dose received by air crews and passengers within the Earth's atmosphere led us to develop an extended application of DYASTIMA named DYASTIMA-R. This new application calculates the energy that is deposited on the phantom and moreover the equivalent dose. Furthermore, a Space Weather Forecasting Center which provides a three day geomagnetic activity report on a daily basis has been set up and has been operating at the Athens Neutron Monitor Station (<http://cosray.phys.uoa.gr>). Finally, all above developed services are in essential importance for the fundamental research as well as for practical applications concerning Space Weather

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