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## High Energy Solar Particle Events foRecasting and Analysis: The HESPERIA Project

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Solar energetic particles are of prime astrophysical interest, but are also a space weather hazard motivating the development of predictive capabilities. The HORIZON 2020 project 'HESPERIA' will produce two novel Solar Energetic Particle (SEP) operational forecasting tools based upon proven concepts (UMASEP, REleASE). At the same time it will advance our understanding of the physical mechanisms that result into high-energy SEP events through the systematic exploitation of the high-energy gamma-ray observations of the FERMI mission and other novel datasets (PAMELA; AMS), together with in situ SEP measurements near 1 AU. Furthermore, HESPERIA will explore the possibility to incorporate the derived results into future innovative space weather services. Publicly available software to invert neutron monitor observations of relativistic SEPs to physical parameters that can be compared with the space-borne measurements at lower energies will be provided for the first time. In order to achieve these goals HESPERIA will exploit already available large datasets stored into databases such as the neutron monitor database (NMDB) and SEPServer that have been developed under FP7 projects from 2008 to 2013. The structure of the HESPERIA project, its main objectives, as well as the added value to the SEP research will be presented and discussed.

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