GUMNET - A new subsurface observatory in the Guadarrama Mountains, Spain

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This year GUadarrama Monintoring NETwork Initiative (GUMNET), a highly interdisciplinary group of scientists was funded for setting up an observational network in the Sierra de Guadarrama north of Madrid. This mountain range is part of the central system, and reaches maximal heights more than 2400 m. It is regarded as a zone of regionally high meteorological, climatological, and environmental significance. The monitoring network aims at long-term meteorological, climatological, and environmental observations. Though primarily targeting the experimental investigation of atmosphere-land interactions in mountainous areas, it will provide an unique environment for a wide spectrum of scientific investigations.

The network comprises a large number of meteorological and environmental observation sites, concentrated in, but not restricted to, the area of the Peñalara Natural Park. In particular, several (up to 6) of these complete meteorological observation sites will be complemented by shallow (20 m) boreholes, where temperature and soil moisture are monitored. Additionally, there will be the opportunity to do (repeated) temperature logging in deeper boreholes (up to 700 m) on a profile across the mountain range, which were drilled several years ago as part of the pre-site investigations for the nearly 30 km long Guadarrama railway tunnel.

This initiative is part of the Moncloa Campus (http://www.campusmoncloa.es/en/), and comprises groups from the Complutense (UCM) and Polytechnic (UPM) universities of Madrid, Spain's State Meteorological Agency (AEMET), the CIEMAT research center, and the Peñalara Natural Park. However, most of the data will be available to the scientific community, and interested researchers will be welcome to use this framework for their own research.