AMR complex magnetic signatures multisensor planned at ExoMars 2020 Surface Platform

Jesus Vicente (1), Jesús Tabero (1), Jesús Pazos (1), Alberto Regadío (1), Pedro Aguilar (1), César Pérez (2), and Marina Díaz Michelena (3)

(1) INSTITUTO NACIONAL DE TÉCNICA AEROESPACIAL (INTA), ELECTRONIC TECHNOLOGIES DEPARTMENT, Spain (jesusvicente91@gmail.com), (2) ISDEFE, external consultant for INTA, Spain, (3) INSTITUTO NACIONAL DE TÉCNICA AEROESPACIAL (INTA), PAYLOADS AND SPACE SCIENCES DEPARTMENT, Spain

The ExoMars 2020 mission will include a European rover from ESA (European Space Agency) and a Russian Surface Platform from Roscosmos. AMR (Anisotropic Magneto-Resistance) instrument is part of the METEO payload (Meteorological package) developed by IKI (Space Research Institute of the Russian Academy of Sciences). It will be located on the Surface Platform to measure magnetic fields on the surface of Mars. To significantly improve the exploration of crustal rocks of Mars, its geological history and their implications for environmental and life conditions, the innovative multisensor AMR instrument should provide the first vector magnetic field data on the surface. This paper is presented as an overall description of AMR instrument for ExoMars 2020, highlighting the system architecture, power consumption, operational modes and the main metrological aspects of the sensors.