

SPACE EXPLORATION SYMPOSIUM (A3)  
Mars Exploration – Science, Instruments and Technologies (3B)

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REMS, TWINS & MEDA: THREE GENERATIONS OF ENVIRONMENTAL INSTRUMENTS ON JPL  
MARS MISSIONS

**Abstract**

This paper summarises the work performed in the development of three environmental sensors in the last JPL Missions to Mars: The Rover Environmental Monitoring Station (REMS) on Curiosity Rover, the Temperature and Wind Sensors (TWINS) on Insight Lander, and the Mars Environmental Dynamic Analyzer (MEDA) on Mars 2020 Rover.

All instruments have been lead in Spain by the Centro de Astrobiología (CAB), with CRISA (an Airbus Defence and Space company) as Prime Contractor.

The implementation of this instruments in the different Mars Mission is a good example of the benefits of international cooperation between NASA/JPL and Spanish National Space programmes, throughout the last decade.

The main performances and technological developments are reviewed, for the three programmes, and the specific sensors for measurement of Wind, Air Temperature, Ground Temperature, Humidity, Pressure, UV Radiation, Thermal IR Radation and Dust.