



Development of the Kiel sensors for the EPD instrument on-board Solar Orbiter

Cesar Martin (1), Robert F. Wimmer-Schweingruber (1), Shrinivasrao R. Kulkarni (1), Jan Tammen (1), Christoph Terasa (1), Jia Yu (1), Sebastian Boden (1), Jan Steinhagen (1), Lauri Panitzsch (1), Ali Ravanbakhsh (1), Stephan Boettcher (1), Christian Hamann (1), Lars Seimetz (1), and Javier Rodriguez-Pacheco (2)

(1) Uni-Kiel, IEAP, ETPH, Kiel, Germany (martin@physik.uni-kiel.de), (2) SRG, Universidad de Alcalá, Alcalá de Henares, (SPAIN)

Solar Orbiter is ESA's next solar and heliospheric mission, planned for launch in January 2017 and approaching the Sun as close as 0.28 AU. One of the Solar Orbiter's scientific questions is "How do the solar eruptions produce energetic particle radiation that fills the heliosphere?". The Energetic Particle Detector (EPD) will provide key measurements for this and the other Solar Orbiter science objectives. The EPD suite consists of four sensors measuring electrons, protons, and ions from helium to iron, and operating at partly overlapping energy ranges from 2 keV/n up to 200 MeV/n. The EPD sensors are: SupraThermal Electrons and Protons (STEP), Suprathermal Ion Spectrograph (SIS), Electron Proton Telescope (EPT) and High Energy Telescope (HET). Besides, the EPD sensors share the Instrument Control Unit (ICU). The University of Kiel in Germany is responsible for developing the EPT-HET, STEP and SIS sensors. Here we present the development status of the EPT-HET and STEP sensors focusing on the activities planned for the current phase C. Those activities include results of the environmental tests on the EPT-HET Structural Thermal Model (STM) and the assembly of the Engineering Model (EM).