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DEEP SPACE MISSION REMEC FOR GCR MONITORING

Abstract

The Radiation Environment Monitor for Energetic Cosmic rays (REMEC) is one of the missions selected by ESA in the frame of Czech ambitious missions programme to conduct phase 0, A, B studies of missions built and operated by Czech companies and research organizations. REMEC is a microsatellite proposed to be placed outside of Earth's magnetosphere in Sun-Earth L2 point where it will precisely measure and monitor the flux, composition and direction of cosmic radiation with energies from 10 MeV/n to 10 GeV/n. The main scientific payload is the novel magnetic spectrometer Pix.PAN based on Timepix4 technology, complemented by HardPix Timepix3-based radiation monitor. REMEC will study properties of galactic cosmic rays, provide new input to improve current SEP physics models and monitor penetrating particles presenting a serious hazard for long term human space travel and lunar habitation.