



Energetic charged particle measurements by SIXS on-board BepiColombo MPO

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We will present the scientific objectives and the initial design of the *Solar Intensity X-ray and particle Spectrometer (SIXS)* selected by ESA Science Programme Committee to fly on-board *Mercury Planetary Orbiter (MPO)* of the cornerstone mission *BepiColombo* to Mercury. The mission is scheduled for launch in 2012, and the instrument design has already started. The *SIXS* experiment will contain four X-ray detectors and a small particle detector capable of measuring the incident signal causing X-ray glow and fluorescence on the Hermean surface. The particle detector measures the flux of energetic protons in the energy range 1–30 MeV at 1-minute time resolution and $\Delta E/E \sim 50\%$ energy resolution. The instrument has also some sensitivity to electrons at energies 0.1–3 MeV. First estimates of the contribution of solar energetic protons to the fluorescence signal will be presented. As a secondary science goal, the instrument will provide a valuable data set for studies of solar energetic particle transport and acceleration near the Sun, as well.