



## **The ESA Rad-Hard electron monitor (RADEM) for JUICE**

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The ESA Jupiter Icy moons explorer (JUICE) mission will encounter a harsh radiation environment that is known to be severe but that is not yet fully understood. The Rad-Hard electron monitor (RADEM), currently under development, is a compact instrument (1L, 1kg, 2.2W) that will be set on JUICE for measuring the radiation environment during the mission. Its design is adapted to the harsh Jovian radiation environment and optimized for the detection of high energetic electrons. RADEM will consist of three detector subunits. The magneto-spectrometer will measure the electron spectrum in the 0.3 to 40 MeV range. The directionality sensor will characterize the pitch angle distribution of the electron environment. The Silicon stack detector will be dedicated to measure the spectrum of solar and Jovian protons, as well as the LET spectrum of heavy ions.

In this paper we present the status of the development of RADEM, as well as Geant4 Monte Carlo analysis of the capability of the instruments.