

## The ESA-led JUpiter ICy moon Explorer mission: a sophisticated instrumentation in an intense radiation environment

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The JUICE (Jupiter ICy moon Explorer) mission is one of the three candidates for the first ESA Cosmic Vision 2015/2025 L-class mission slot, with a foreseen launch in 2022. The final selection will be known in April 2012. JUICE will carry out an in-depth study of the Jovian system and its four largest satellites, with particular emphasis on Ganymede and Europa. It will conduct unprecedented detailed studies of Jupiter and its magnetosphere, the diversity of the Galilean satellites, the physical characteristics, composition and geology of their surfaces. A model payload of 11 instruments addressing most of JUICE science goals has been studied for the spacecraft. The studied model payload consists of a remote sensing package, a geophysical package, and an in situ package. We will first review the mission science objectives and enabling instrumentation. We will then make use of the charged particle package in order to illustrate some of the main mission challenges related to the intense radiation environment of Jupiter.

Keywords: Jupiter, instrumentation, mission, radiation, particle package