

Development of charged particle instruments for JUICE/CEPAGE and beyond

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JUICE (JUper ICy moon Explorer) is a mission to Jupiter for the exploration of Jovian system including magnetospheric dynamics and plasma interaction with moons' surface/atmosphere/ionosphere. The spacecraft is supposed to accommodate scientific instruments for imaging, spectroscopy, sounders/radio sciences, and field and particles. The French institute IRAP leads the CEPAGE consortium (ChargEd Particle Analysers for Galilean Environments) to deliver a charged particle instrument package, in response to ESA's AO. This consortium is an international collaboration among several countries including Japan, and ISAS/JAXA will deliver a high-energy particle analyser (HEP) and a part of a low-energy ion mass analyser (ISATIS). We have designed each instrument in detail so as to meet scientific goals for JUICE. Furthermore, since the design concept is toward broad application for limited spacecraft resources (such as small mass requirement and non-spin attitude control), we consider these instruments/techniques can be applied to various future explorations.