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【439】 The Scalar Magnetometer on board ESA's JUICE Mission and its Potential as a Vector Magnetometer

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The scalar magnetometer on board ESA's JUICE mission is an optically pumped magnetometer, based on the coherent population trapping (CPT) effect in the atomic vapour of the rubidium isotope 87. The CPT effect is a quantum mechanical interference effect which allows the precise detection of the external magnetic field strength by measuring the so-called Zeeman shifts. The instrument excites and couples several CPT resonances to enable a measurement principle which is inherently drift and dead-zone free.

The presentation will give an overview of the scalar magnetometer for the JUICE mission as well as the first results of its potential for vector measurements.

Theoretical Work

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