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ON-CHIP POLARIMETRY FOR THE SPICA B-BOP INSTRUMENT

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SPICA is one of the three projects competing for the ESA M5 mission. The three SPICA instruments share the focal plane of a 2.5 m diameter telescope cooled to 8 K, to achieve ultimate sensitivity measurements in the Far-IR and submm domains. The B-BOP camera, one of these instruments with unprecedented polarimetric capabilities, is mainly devoted to reveal the role of magnetic field in many astrophysical processes.

For this space application, a simple, robust, easy to assemble facility needs the integration of the instrumental polarimetric function at the heart of the detectors. The innovative side of these detector chips is the development of submillimeter bolometers adapted to measure the linear polarization and suited to retrieve the I, Q, U Stokes parameters without any mechanism. In parallel, the other goal is to produce detectors with two orders of magnitude better sensitivity than the Herschel Observatory, using doped silicon meanders (“Only leg detectors”) cooled to 50 mK. We describe the different functions of the instrument built around an optical path aimed to minimize the induced self-polarization.

Less than 5 years of experience since completion of Ph.D

N

Student (Ph.D., M.Sc. or B.Sc.)

N

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