

**Baptist Piest - Generation and
investigation of quantum
mixtures on a compact
atom-chip setup suitable for
space operation**

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Cold atom experiments in space offer advantages like the access to ultralong free-fall times or a low vibration noise environment making them ideally suitable for atom interferometry experiments. Implementing a second atomic species allows to test fundamental principles like the universality of free fall but also studies in molecular physics or bubble traps, enhanced by the absence of gravity. However, it is a challenge to meet the requirements of space-borne experiments in terms of robustness, autonomy and reliability while offering a high performance of the atom source. In this talk I will give an overview about the status of the MAIUS-B sounding rocket payload including ground-based experiments, performance evaluation and the recent MAIUS-2 mission.

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