Contribution ID: **197** Type: **Talk**

【411】MEMS Atomic Vapor Cells for Quantum Technologies

Thursday, August 30, 2018 5:00 PM (30 minutes)

CSEM is developing quantum metrology and sensing devices based on in-house MEMS atomic vapor cells with integrated functionalities [1]. Such cells were successfully integrated in <5mm flat miniature atomic clock physics packages with state-of-the-art performance [2]. In the context of NMR gyroscopes, parameters like relaxation times of noble atoms nuclear spins as a function of cell size and temperature have been characterized [3].
Here, we will present these projects in more details and show how CSEM's miniaturization and integration competences could benefit various quantum device developments in Switzerland and Europe.

[1] https://doc.rero.ch/record/308907
[2] J. Haesler et al., Proceedings of the 6th international colloquium on scientific and fundamental aspects of GNSS/Galileo, Valencia (2017)
[3] https://doi.org/10.1063/1.5025449

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Session Classification: Atomic Physics and Quantum Optics

Track Classification: Atomic Physics and Quantum Optics