The MIGA project: measuring gravity strain with atom interferometry

J.Junca,[1,*] D. O. Sabulsky,[1] X. Zou,[1] P. Bouyer,[1] and B. Canuel for the MIGA consortium[1]

[1]*LP2N, Laboratoire Photonique, Numérique et Nanosciences, Université Bordeaux–IOGS–CNRS:UMR 5298, rue F. Mitterrand, F–33400 Talence, France*

The MIGA project aims at using atom interferometry as a tool to study geophysical signals and demonstrate the applicability of quantum sensors to build a large scale instrument able to conduct high sensitivity gravity strain measurements. Currently under construction at the LSBB (low noise underground laboratory) in Rustrel in southern France, MIGA will comprise 3 atom sources connected by a common laser link for a total length of 150 m buried 300 m underground. I will present the instrument and its status of construction and a preliminary setup that enables us to study and fine tune the head responsible for producing the atoms samples at the core of the experiment.

* joseph.junca@institutoptique.fr