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"The Very Long Baseline Atom Interferometry (VLBAI) facility at the Hannover Institute of Technology opens up exciting possibilities for highly precise inertial measurements, with applications spanning from fundamental physics to geodesy. The 10-meter baseline facility, equipped with Bose-Einstein Condensates (BECs) and a high-performance Seismic Attenuation System (SAS), holds tremendous potential for the development of a highly accurate and sensitive absolute gravimeter. VLBAI employs the Bragg interferometer scheme to measure the acceleration due to gravity of freely falling atoms along the baseline. Here, we present our recent advancements towards the atom interferometry by launching Rb BECs along the baseline. To this point we have demonstrated a millimeter launch by accelerating the optical dipole trap and the bragg beam splitter using the all-optical cold Rb atom source at VLBAI. We show the current status of the all-optical Rb-BEC source, a first characterization of the passive vibration isolation performance and the necessary methods such as matter-wave lenses, Bragg beam splitters and initial momentum kick for the inertial measurements with VLBAI."

Session Classification: Poster Session & Wine & Coffee