

Interferometry with Bose-Einstein condensates in microgravity

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Research on light-pulse atom interferometers is motivated by the interest in accurate and long-term stable inertial measurements. Important sensitivity levers for the latter are the extension of the interferometry time and the transfer of large numbers of photon momenta. Ultra-cold atomic ensembles are a promising resource for light-pulse interferometers considering all aforementioned aspects. We explore collimated Bose-Einstein condensates generated on atom chips as ultra-slowly expanding gas for light-pulse interferometry. I will report on the status of experiments in free-fall facilities and in space, i.e. during the last sounding rocket mission.