

The article entitled «Prospects for precise measurement with echo Atom interferometry» (EAI) gives, a rich, consistent and relevant overview of the application of Echo Atom interferometry for high precision measurements: photon recoil, gravity and g-factors measurements.

The results presented in this paper have been already published in other journals, considering both the theoretical aspects that experimental (essentially in Physical Review A).

The key point of this paper is the detailed description of different configurations used to implement the echo atom interferometer. This makes it an essential and valuable reference for anyone who wants to build an experience based on this technique. Furthermore, this paper is very well written and reading is fluid despite the many complex technical aspects described herein.

For this reasons I recommend strongly the publication of this paper.

However three points should be considered to improve the paper:

1) Authors should tell us more about the detection technique. How the read-out signal is analyzed to extract the fringe pattern? What is the detection noise, how this noise impacts the statistical uncertainty? ....

2) To underline the benefit of EAI method for gravity measurement, the authors draw on a comparison with the method described in ref (118). Since 2011, others methods has been investigated (see M. Andia et al., Phys. Rev. A 88, 031605(R) (2013 and R. Charriere et al. Rev. A85, 013639 (2012)). I think that these references should be at least cited.

3) The authors present succinctly the (low coast) laser source that leads to the required features (in terms of power, spectral tuning range and frequency noise). To my knowledge similar schemes are currently used in many laboratories. Probably I did not get (understand? ) the subtleties. The authors should more highlight the originality of their scheme. The ref 58 should be completed, When I look on the web, using the title of the reference 58, I find a patent?