

Abstract Submitted  
for the DAMOP16 Meeting of  
The American Physical Society

**Dual interferometry with a tunable point of minimum magnetic sensitivity**<sup>1</sup> EDUARDO GOMEZ, SAEED HAMZELOUI, DANIEL MARTINEZ, VAHIDE ABEDIYEH, NIEVES ARIAS, Physics Institute, Autonomous University of San Luis Potosi, VICTOR MANUEL VALENZUELA, Autonomous University of Sinaloa — The clock transition is well known for its minimum magnetic sensitivity at  $B=0$ . The hyperfine transition between  $F=1, m=-1$  and  $F=2, m=1$  in  $^{87}\text{Rb}$  also shows a point of minimum magnetic sensitivity but it happens at a field of 3.2 Gauss. An interferometer that uses a mixture of the previous two transitions gives a minimum of magnetic sensitivity at a tunable value of the magnetic field between 0 and 3.2 Gauss. The desired magnetic field value can be selected by varying the population in each transition. The relative populations are controlled with a microwave pulse joining states in both interferometers.

<sup>1</sup>Support from CONACYT and Fundacion Marcos Moshinsky

Eduardo Gomez  
Physics Institute, Autonomous University of San Luis Potosi

Date submitted: 27 Jan 2016

Electronic form version 1.4