

Abstract Submitted
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Dual interferometry with a tunable point of minimum magnetic sensitivity¹ EDUARDO GOMEZ GARCIA, SAEED HAMZELOUI, DANIEL MARTINEZ-ARIAS, Universidad Autónoma de San Luis Potosí, VÍCTOR MANUEL VALENZUELA, Universidad Autónoma de 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}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. We implement the mixture interferometer using single photon transitions only, taking advantage of an arbitrary wave synthesizer.

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