Dual interferometry with a tunable point of minimum magnetic sensitivity$^1$ 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.

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