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Test of local Lorentz invariance using a double-cavity laser system

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Abstract

We report the results of testing the local Lorentz invariance during five-month operation of a double-cavity laser system, where one cavity operates in a free generation mode while the frequency of the second cavity is stabilized with a nonlinear ultra-narrow absorption resonance of the methane molecule. An interpretation of the experimental results is given on the basis of the Robertson-Mansouri-Sexl formalism. © 2012 Pleiades Publishing, Ltd.

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