

## Hypothesis testing of Continuous Spontaneous Localisation

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We apply the formalism of hypothesis testing to the detection of the continuous spontaneous localisation (CSL) model. The testbed consists of a cavity optomechanical system: the collapse mechanism acts as an additional heating of the mechanical resonator, thereby indirectly affecting the cavity field on which we can perform measurements. Initial results are based on discrimination between two squeezed thermal states with different temperatures. We calculate the asymptotic error probabilities associated with a classical statistical test, using all-optical homodyne measurements, and compare the results with the quantum Chernoff bound.

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