



# Towards quantum experiments with human eyes as detectors based on cloning via stimulated emission

Sensing

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## ABSTRACT

We show theoretically that a large Bell inequality violation can be obtained with human eyes as detectors, in a “micro-macro” experiment where one photon from an entangled pair is greatly amplified via stimulated emission. The violation is robust under photon loss. This leads to an apparent paradox, which we resolve by noting that the violation proves the existence of entanglement before the amplification. The same is true for the micro-macro experiments performed so far with conventional detectors. However, we also prove that there is genuine micro-macro entanglement even for high loss.

*The full article can be found here:*

<https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.103.113601>