



University of Crete
Department of Physics

Physics Colloquium

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Quantum Mechanics: reality or an illusion of our detectors?

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ABSTRACT

It is not inconceivable that we may be living in a classical world and that Quantum Mechanics is just an illusion of our detectors. In fact, several “classical loopholes” of Quantum Mechanics are being discussed in the literature. We will demonstrate how a classical detector with “memory” can generate an interference pattern from the action integrals of the non-interacting individual particles that reach it. We will also demonstrate how a classical detector with “selective detection efficiency” can reproduce the result of the Aspect EPR experiment. Finally, we will propose two physical experiments that will be able to test these loopholes.