

Abstract Submitted
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Decoherence and the Uncertainty Principle DAVID CRAIG, Le Moyne College — The uncertainty principle is normally understood as representing a limit on the fundamental accuracy of simultaneous measurements of incompatible observables. In the context of consistent/decoherent histories formulations of quantum theory, we show that it may also be understood as quantifying the degree of course-graining necessary in order for histories of a quantum system to decohere. This follows as a consequence of a new inequality bounding the interference between histories in a consistent histories formulation of quantum theory.

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