

Abstract Submitted
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Closed Systems that Measure Particles MICHAEL STEINER,
RONALD RENDELL, Inspire Institute — The Measurement Problem has been
of fundamental concern since the discovery of Schrödinger's equation. We have been
developing a framework for which this problem can be considered under the as-
sumption that the particle and detector are jointly considered a closed system. The
framework is based on imposing conditions on quantum state evolution that such
a closed system meet, including conservation of energy and momentum, no-cloning
and no-signaling, gauge invariance, and relativity constraints. Another requirement
will be presented, which is a quantum mechanical generalization of Newton's first
law. Based on these conditions, we will derive and present several new results.

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