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The modal-Hamiltonian interpretation and the Galilean covariance of quantum mechanics.

Summary: The aim of this paper is to analyze the modal-Hamiltonian interpretation of quantum mechanics in the light of the Galilean group. In particular, it is shown that the rule of definite-value assignment proposed by that interpretation has the same properties of Galilean covariance and invariance as the Schrödinger equation. Moreover, it is argued that, when the Schrödinger equation is invariant, the rule can be reformulated in an explicitly invariant form in terms of the Casimir operators of the Galilean group. Finally, the possibility of extrapolating the rule to quantum field theory is considered.

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