

Abstract

We discuss the Schrödinger picture in C^* -algebraic quantum theory. In the Schrödinger picture, we treat the state change of the system caused by the dynamics (of the system and its environment). Dirac's notion of transition probability plays a central role in this context. We formulate the Schrödinger picture using transition probability in a category theoretical way. Furthermore, we connect the theory of transition probability with quantum measurement theory. The axiomatic approach to quantum measurement in C^* -algebraic quantum theory is consistent with sector theory and gives good examples of transition probability in the category theoretical setting.