

Time of Arrival and the Zeno Effect in Quantum Mechanics

RICHARD LAVINE

University of Rochester, USA

Arrival Times are often measured by detectors, and it is agreed that quantum theory says they are random variables. But quantum mechanics does not give a prescription for their probability distributions. In the quantum Zeno effect, rapidly repeated measurements to determine whether decay has occurred yet actually inhibit the decay. Does the presence of a detector do the same? We propose a simple model of a detector and apply it in some simple situations. It gives a probability distribution via a positive operator valued measure, and greater efficiency of detection tends to induce the Zeno effect.