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A LOGICAL TREATMENT TO QUALTITATIVE PROPERTIES OF *CATUSKOTI* AND ITS IMPLIMENTATION ON QUANTUM MECHANICAL SYSTEMS

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Conventional Aristotelian system of logic consists of two arguments namely, the event, and its negation, that have been widely used with its axiomatic truths. Outcomes in quantum mechanical systems governed by the principle of uncertainty cannot be successfully adapted to the Aristotelian logic. The Eastern system of logics, *catuskoti,* shows a potential of widening the process of reasoning under the logical basis for such physical systems. *Catuskoti* consists of two additional logical arguments namely, the combination of the event and its negation, and the negation of the third argument. Four arguments in the *catuskoti* were formulated under new axioms so that they could be easily adapted to make logic base reasoning of physical phenomena. The third logic argument in *catuskoti* was then modeled with new axioms for the logical reasoning of the uncertainty principle and for the other quantum behavior such as quantum double slit experiment. New system of logic and its new axioms enabled the argument based reasoning for each theory. However, the conflicts between the physical results and the logical arguments became less. The *Catuskoti* with new axiomatic basis leads to new insights of logical reasoning in quantum systems governed by the principle of uncertainty.