

1086-91-992

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78363-8202. *Best Reply Analysis in Two Person Games.*

This talk concerns an application of the normed real division algebra of the quaternions in the theory of quantum games. One of the main tasks in game theory is the identification of potential Nash equilibria of a given game. In mathematical terms, classical games are just payoff functions. Quantum games are particular extensions of classical games.

In this work, we find particular use for a maximally entangled initial state that produces a quantized version of two player two strategy games. When applied to a variant of the game of Chicken, our theory shows that new equilibria manifest themselves and these equilibria are often superior to known equilibria. (Received September 17, 2012)