Séminaire

Three results on weak measurements

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I shall present three important results on weak measurements. They are:

i) repeated weak measurements on a single copy cannot provide any information on it and further that in the limit of very large such measurements, weak measurements have exactly the same characteristics as strong measurements. However, a number of interesting results can be obtained for joint probabilities for the random walks in the quantum state space under such repeated weak measurements.,

ii) the apparent non-invasiveness of weak measurements is no more advantageous than strong measurements in the specific context of Leggett-Garg measurements when errors are properly taken into account and finally,

iii) weak value measurements are optimal, in the precise sense of Wootters and Fields, when the post-selected states are mutually unbiased with respect to the eigenstates of the observable whose weak values are being measured. Furthermore, notion of weak value coordinates for state spaces are introduced and elaborated. It is shown that the metric on the state space in these coordinates is conformal.

Mercredi, 7 septembre, 2016, à 11:00
Pavillon Roger-Gaudry, V-221
Café-biscuits à 10 :45 au V-221

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