Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Some general results on dynamical decoupling[1] ZHEN-YU WANG, REN-BAO LIU, Department of Physics, The Chinese University of Hong Kong — We analyze the efficacy of dynamical decoupling in suppressing decoherence using the time-expansion of the noise correlations. We prove that when the time-expansion of the noise correlations has odd power terms, the dynamical decoupling cannot eliminate the decoherence to an arbitrary order of the short time. And we also show that for noise without hard high-frequency cut-off, the Carr-Purcell-Meiboom-Gill sequences are the optimal solution in the short-time limit.

[1]This work was supported by Hong Kong GRF CUHK402209

Zhen-Yu Wang
Department of Physics, The Chinese University of Hong Kong

Date submitted: 20 Nov 2009 Electronic form version 1.4