

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Optimizing efficiency of noise cancelling in a singlet-triplet spin-qubit array MUHED RANA, JASON KESTNER, FERNANDO CALDERON, Univ of Maryland-Balt County — Singlet-triplet qubits are a very good candidate for use in quantum computing and quantum operations due to their long coherence time and rapid gate operations. The fluctuations of the background nuclear spin bath and fluctuations in electrostatic quantum dot confinement potential affects the precise manipulation of the qubit. Recently, a method was developed to create an identity operation that corrects both sources of errors to the first order [1]. We now consider how much the compensating identity pulse sequence can be shortened in cases where only one dominant source of error needs correction. [1] J.P. Kestner et al., Phys. Rev. Lett. 110, 140502 (2013).

Muhed Rana
Univ of Maryland-Balt County

Date submitted: 15 Nov 2013

Electronic form version 1.4