

Abstract Submitted
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Spin measurement in an undoped Si/SiGe double quantum dot incorporating a micromagnet XIAN WU, DANIEL WARD, JONATHAN PRANCE¹, DOHUN KIM, ZHAN SHI, ROBERT MOHR, JOHN GAMBLE², DONALD SAVAGE, MAX LAGALLY, MARK FRIESEN, SUSAN COPPERSMITH, MARK ERIKSSON, University of Wisconsin-Madison — We present measurements on a double dot formed in an accumulation-mode undoped Si/SiGe heterostructure. The double dot incorporates a proximal micromagnet to generate a stable magnetic field difference between the quantum dots. The gate design incorporates two layers of gates, and the upper layer of gates is split into five different sections to decrease crosstalk between different gates. A novel pattern of the lower layer gates enhances the tunability of tunnel rates. We will describe our attempts to create a singlet-triplet qubit in this device. This work was supported in part by ARO(W911NF-12-0607), NSF(DMR-1206915), and the United States Department of Defense. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the official policies, either expressly or implied, of the US Government.

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