

Abstract Submitted  
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**Low frequency charge noise comparison in Si/SiO<sub>2</sub> and Si/SiGe quantum dots to assess suitability for quantum computing**<sup>1</sup> BLAKE FREEMAN, JOSHUA SCHOENFIELD, HONGWEN JIANG, Univ of California - Los Angeles — We directly compare the low frequency charge noise in Si/SiO<sub>2</sub> and Si/SiGe gate defined quantum dots by using devices with identically patterned gates and similar fabrication procedures. Charge noise figures are obtained by measuring the low frequency  $1/f$  current noise through the biased quantum dots in the coulomb blockade regime. The current noise is normalized and used to extract a measurement of the potential energy noise in the system. The temperature dependence of this noise and other recent measurements will be discussed. Ultimately we find the measured charge noise in Si/SiO<sub>2</sub> compares favorably with that of the SiGe device as well as previous measurements made on other substrates suggesting Si/SiO<sub>2</sub> is a viable candidate for spin based quantum computing.

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