

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Spectroscopic study of energy levels and transition rates in large area flux qubit** JAAN MANNIK, DOUGLAS BENNETT, VLADIMIR KUZNETSOV, VIJAY PATEL, WEI CHEN, JAMES LUKENS, Stony Brook University — The level structure and transition rates between fluxoid states of a large area flux qubit have been studied using microwave spectroscopy and resonant tunneling spectroscopy. This qubit uses an rf-SQUID in a gradiometer configuration and has independent, *in situ*, controls for the barrier height between fluxoid wells and the relative positions of levels in different wells. This design makes it well suited for the study of decoherence mechanisms that adversely affect the operation of flux as well as phase qubits based on fluxoid states. This work was supported in part by NSF and by AFOSR and ARDA through a DURINT program.

Jaan Mannik

Date submitted: 01 Dec 2004

Electronic form version 1.4