Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

STM investigation of $FeSe_{1-x}S_x$[1] M. IAVARONE, S.A. MOORE, E. LECHNER, Department of Physics, Temple University, Philadelphia, PA 19122, J. CURTIS, Department of Physics, Drexel University, Philadelphia, PA 19104, O.S. VOLKOVA, A.N. VASILIEV, Low Temperature Physics and Superconductivity Department, Physics Faculty, M.V. Lomonosov Moscow State University, Moscow 119991, Russia, D.A. CHAREEV, Institute of Experimental Mineralogy, Russian Academy of Sciences, 142432 Chernogolovka, Moscow District, Russia, G. KARAPETROV, Department of Physics, Drexel University, Philadelphia, PA 19104 — FeSe has the simplest structure among the Fe-based superconductors, and this very simplicity could provide the most appropriate venue of understanding the superconducting mechanism of Fe-based superconductors. High quality FeSe single crystals were grown in evacuated quartz ampoules using a KCl/AlCl flux and the structure of tetragonal P4/nmm was demonstrated by x-ray diffraction. Low temperature STM measurements were performed on $FeSe_{1-\delta}$ and $FeSe_{1-x}S_x$ with x=0.04 and 0.09. Effects of multiband superconductivity and vortex matter as a function of doping will be presented.

[1]G.K. and A.N.V. acknowledge the support by a grant from U.S. Civilian Research & Development Foundation (CRDF Global).

M. Iavarone
Department of Physics, Temple University, Philadelphia, PA 19122

Date submitted: 14 Nov 2014 Electronic form version 1.4