

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Evidence of nodes in the order parameter of the superconducting doped topological insulator $\text{Nb}_x\text{Bi}_2\text{Se}_3$ via penetration depth measurements M. P. SMYLIE, University of Notre Dame / Argonne National Laboratory, H. CLAUS, U. WELP, W.-K. KWOK, Argonne National Laboratory, Y. QIU, Y. S. HOR, Missouri University of Science and Technology, A. SNEZHKO, Argonne National Laboratory — The low-temperature variation of the London penetration depth $\lambda(T)$ in the candidate topological superconductor $\text{Nb}_x\text{Bi}_2\text{Se}_3$ ($x=0.25$) is reported for several crystals. The measurements were carried out by means of a tunnel-diode oscillator technique in both field orientations ($H_{\text{rf}} // c$ and $H_{\text{rf}} // ab$ planes). All samples exhibited quadratic temperature dependence at low temperatures clearly indicating the presence of point nodes in the superconducting order parameter. The results presented here are not consistent with a complete superconducting gap. We interpret our data on $\text{Nb}_x\text{Bi}_2\text{Se}_3$ in terms of a nematic odd-parity spin-triplet pairing state with E_u symmetry. This work was supported by the U.S. Department of Energy, Office of Science, Basic Energy Sciences, Materials Sciences and Engineering Division, Contract No. DE-AC02-06CH11357. MPS thanks ND Energy for supporting his research and professional development through the ND Energy Postdoctoral Fellowship Program. YSH acknowledges support from National Science Foundation grant number DMR-1255607.

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Date submitted: 11 Nov 2016

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