## Abstract Submitted for the MAR15 Meeting of The American Physical Society

Observation of topologically protected surface states in a Bi-Pd superconductor MASATO SAKANO, Quantum-Phase Electronics Center (QPEC) and Department of Applied Physics, The University of Tokyo, KENJIRO OKAWA, MANABU KANOU, Materials and Structures Laboratory, Tokyo Institute of Technology, HARUHIKO SANJO, Quantum-Phase Electronics Center (QPEC) and Department of Applied Physics, The University of Tokyo, TAICHI OKUDA, Hiroshima Synchrotron Radiation Center, Hiroshima University, TAKAO SASAGAWA, Materials and Structures Laboratory, Tokyo Institute of Technology, KYOKO ISHIZAKA, Quantum-Phase Electronics Center (QPEC) and Department of Applied Physics, The University of Tokyo — A layered Bi-Pd superconductor is investigated by spin- and angle-resolved photoemission spectroscopy. Beside the spin-degenerate bulk bands, several spin-polarized surface bands, some of which crossing the Fermi level, are clearly observed. These surface states are evaluated to be topologically protected, based on the  $Z_2$  invariant analysis in analogy to 3dimensional strong topological insulators. It indicates that this material is likely to be a topological superconductor realized without any carrier doping or applying pressure.

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