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Observation of anomalous current phase relation on Pb-Bi₂Te₃ Josephson devices YUAN PANG, JIE SHEN, JUNHUA WANG, JUNYA FENG, FANMING QU, ZHAOZHEN LYU, JIE FAN, GUANGTONG LIU, ZHONGQING JI, XIUNIAN JING, CHANGLI YANG, Institute of Physics, CAS, QINGFENG SUN, X. C. XIE, ICQM, Peking University, LIANG FU, Department of Physics, Massachusetts Institute of Technology, LI LU, Institute of Physics, CAS — Josephson devices based on s-wave superconductor Pb and 3D topological insulator Bi₂Te₃ have been fabricated and investigated down to low temperatures. Anomalous current phase relation (CPR) was observed, indicating the existence of an unconventional component of superconductivity. Our experiment demonstrates that hybrid devices based on s-wave superconductor and 3D topological insulator might provide a platform for searching for and manipulating Majorana bound state.

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