Topologically stable gapless phases in nonsymmmorphic superconductors SHINGO KOBAYASHI, MASATOSHI SATO, Department of Applied Physics, Nagoya University — Nontrivial node structures are a salient feature in the unconventional superconductors (SCs), providing valuable clues to an understanding of the symmetry of Cooper pairs. In the presence of spin-orbital coupling, the node structures are determined by the group theory \[1\] where the symmetry operation in a crystal lattice is followed by spin. Such a node is stabilized by crystal symmetry. Especially, as the counterexample of the Blount’s theorem, Micklitz and Norman indicated that there exists a stable line node in nonsymmmorphic SCs with odd parity \[2\] In our previous study \[3\], we found that the topological classification not only includes the Blount’s theorem but also updates the instability of line node via the bulk-boundary correspondence. In this talk, taking into account the nonperiodic boundary condition on a tight-binding Hamiltonian, we extend the topological node stability to nonsymmmorphic SCs and show that the stable line node suggested by Micklitz and Norman is also the topological object. \[1\] M. Sigrist and K. Ueda, Rev. Mod. Phys. \textbf{63}, 239 (1991). \[2\] M. R. Norman, Phys. Rev. B \textbf{32}, 15093 (1995); T. Micklitz and M. R. Norman, \textit{ibid.} \textbf{80}, 100506(R) (2009). \[3\] SK, K. Shiozaki, Y. Tanaka, and M. Sato, Phys. Rev. B, \textbf{90}, 024516 (2014).