Glide-symmetric topological crystalline insulators with nonprimitive lattices HEEJAE KIM, SHUICHI MURAKAMI, Department of Physics, Tokyo Institute of Technology — Topological crystalline insulators (TCIs) with glide symmetry have been theoretically proposed recently. Such glide-symmetric TCIs are characterized by a Z2 topological number. In our previous work, we studied a phase transition between the TCI phase and a normal insulator (NI) phase, and show that the Weyl semimetal phase intervenes between the TCI and the NI phases. In this presentation, we consider this glide-symmetric TCI in nonprimitive lattices. In this case, the previous formula of the Z2 topological number does not apply. We give a new formula of the Z2 topological number for glide-symmetric TCI on nonprimitive lattices, and describe how TCI-NI phase transitions occur via emergence of Weyl nodes. We also apply the results to magnon systems and photonic crystals with glide symmetries.

Heejae Kim
Department of Physics, Tokyo Institute of Technology