
ELISSA ROSS, York University, 4700 Keele Street, Toronto, ON M3J 1P3

The Rigidity of Graphs on a Flexible Torus

Taking motivation from the study of the molecular structure of zeolites, we consider the rigidity properties of infinite periodic frameworks. We can think of such a framework in n dimensions as a multigraph embedded on an n -dimensional torus, where the torus may be of fixed or variable dimensions. We use the language of gain graphs to describe this embedding, and we aim to characterize the generic infinitesimal rigidity of infinite periodic frameworks by the properties of the underlying (finite) gain graph.

This talk will outline new results characterizing the rigidity of graphs on the flexible torus, which builds on earlier work about the rigidity of such graphs on the torus with fixed dimensions.