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Elissa Ross* (elissa@mathstat.yorku.ca), Department of Mathematics, York University, N520 Ross Building, 4700 Keele Street, Toronto, Ontario M3J 1P3, Canada. *Periodic Rigidity*. Preliminary report.

Zeolites are a type of molecule with a sieve-like structure where the “holes” of the sieve expand and contract. Using this as motivation, we study 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. In this talk we describe a characterization of infinitesimal rigidity for 2-dimensional frameworks on a fixed torus, and outline what is known for periodic frameworks in higher dimensions. (Received February 24, 2009)