

1112-16-211

Alexander C Garver* (garv0102@umn.edu), 206 Church Street SE, Minneapolis, MN 55455,
and **Thomas McConville**. *Lattice Properties of Oriented Exchange Graphs*.

The exchange graph of a quiver is the graph of mutation-equivalent quivers whose edges correspond to mutations. The exchange graph admits a natural acyclic orientation called the oriented exchange graph. Building on work of Iyama, Reiten, Thomas, and Todorov, we show that this directed graph is a semidistributive lattice by using the isomorphism to the lattice of functorially finite torsion classes of the corresponding cluster-tilted algebra when the exchange graph is finite. Furthermore, if the quiver is mutation-equivalent to a type A Dynkin quiver or is an oriented cycle, then the oriented exchange graph is a lattice quotient of a lattice of biclosed subcategories of modules over the cluster-tilted algebra, generalizing Reading's Cambrian lattices in type A. We also apply our results to address a conjecture of Brustle, Dupont, and Perotin on the lengths of maximal green sequences. (Received August 04, 2015)