



Speaker: Matthew Dyer
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Tuesday, November 24, 2015

10:00 AM

258 Hurley Hall

Title: Lattices from valued digraphs

Abstract:

Motivated initially by problems in the combinatorics of symmetric groups and later by conjectures on biclosed subsets of positive roots of Coxeter groups, Francois Viard has recently given a simple general construction which attaches to each "valued digraph" (a directed graph with a suitable labeling of its vertices by non-negative integers) a complete lattice of subsets of the vertex set. He has shown that the construction and its variants produce, for instance, the Tamari lattices, and the weak orders of most finite and some affine Coxeter groups. He conjectures that, applied to certain valued digraphs with the positive roots as vertex set, it produces the biclosed subsets of positive roots, but this is not known to hold in any non-trivial infinite case. This talk, which will be largely independent of earlier talks in this series, will describe this construction and some of its known and conjectured applications.