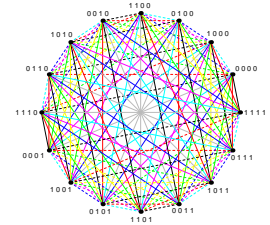


**Jointly Organized by
School of Computer Science and
Department of Mathematics and Statistics**



October 28 (Monday), 17:00 – 18:00, Burnside Hall 1205

**A Fast Gray Code Listing of the Perfect Elimination Orderings of
a Chordal Graph**

by

**Prof. Frank Ruskey
University of Victoria**

Chordal graphs, sometimes called triangulated graphs, are those that have no induced chordless cycle of length greater than three. Chordal graphs are characterized by the fact that they possess a perfect elimination ordering (PEO), which is class of permutations of its vertices. Given as input a chordal graph, we develop an algorithm for listing all PEO's of the graph in such a way that successive PEO's differ by one or two transpositions of adjacent elements. Furthermore, the algorithm runs in time proportional to the number of PEO's; i.e., in constant amortized time.

These results are provided as an illustration of a general methodology for quickly listing the basic words of any antimatroid, given a fast “oracle” for determining whether two elements can be transposed and still be a basic word.