

1033-05-21

**Casey Hufford** and **Robin Blankenship\*** ([r.blankenshi@moreheadstate.edu](mailto:r.blankenshi@moreheadstate.edu)), Dept of Mathematics and CS, Morehead State University, Morehead, KY 40351. *Book Embeddings of Chessboard Graphs*. Preliminary report.

The classic  $n$  queens problem inspires a graph, which is then modified to consider placing a pawn on an  $n \times n$  chessboard as an obstruction to the movement of the queens. To embed a graph in a *book*, linearly order the vertices in the *spine* (line) and place the edges in *pages* (half-planes) so that no two edges cross in a page. *Book thickness* is the minimum number of pages needed over all possible vertex and edge assignments. Upper and lower bounds on book thickness are provided for the  $n \times n$  queens graph and for the subgraph of the  $n \times n$  queens graph resulting from a single pawn placed anywhere on the  $n \times n$  board. (Received July 17, 2007)