

1155-05-408

Joshua E Ducey* (duceyje@jmu.edu), 60 Bluestone Dr, MSC 1911, Harrisonburg, VA 22807.

Critical groups of the Kneser and Grassmann strongly regular graphs.

The critical group (or sandpile group) of a graph is the abelian group presented by the Smith normal form of a Laplacian matrix of the graph, and is an interesting graph invariant. In this talk methods of representation theory are applied to compute the critical group of the Grassmann graph on 2-dimensional subspaces of a finite vector space. The same basic technique can be applied to compute critical groups of Kneser graphs, using some modular representation theory of the symmetric group. (Received January 19, 2020)