

Visiting Faculty Talk #4

Date and time: Tuesday, July 14th, 3:00 p.m.

Speaker: Sarah Frick, Furman University Department of Mathematics

Title: *Using graphs in symbolic dynamics*

Abstract: Symbolic dynamics is the study of an evolving system in which both time and space are considered to be discrete. A shift space is among the most fundamental examples. We will discuss certain types of shift spaces that can be described by walks on graphs. We will discuss how some of the properties of the graph give us information about the shift space. In particular, for a shift space, entropy is a way to measure the information capacity of the space. The adjacency matrix of the graph corresponding to a shift space gives us a way to compute the entropy of the space. We will also give a glimpse of some other systems which utilize graphs.