1172-55-306   **Dan Scofield***, daniel.scofield@fmarion.edu, and **Radmila Sazdanovic**. *Exploring data from the chromatic graph polynomial with BallMapper.*

We apply methods from topological data analysis to explore data encoding the chromatic polynomials of graphs up to 10 vertices. In particular, we use BallMapper to observe features in which graphs with similar structural characteristics are clustered together. We provide evidence for a relationship between the coefficients of the chromatic polynomial and measures of graph irregularity. In addition, we apply our approach to the Tutte polynomial and observe similar features whose existence sheds light on the structures detected by Tutte coefficients. (Received August 30, 2021)