

1164-14-32

Madeline Brandt*, madelinevbrandt@gmail.com, and **Christopher Eur** and **Leon Zhang**.

Tropical Flag Varieties.

Flag matroids are combinatorial abstractions of flags of linear subspaces, just as matroids are of linear subspaces. We introduce the flag Dressian as a tropical analogue of the partial flag variety, and give a correspondence between: (a) points on the flag Dressian, (b) valuated flag matroids, (c) flags of projective tropical linear spaces, and (d) coherent flag matroidal subdivisions. We introduce and characterize projective tropical linear spaces, which serve as a fundamental tool in our proof. We apply the correspondence to prove that all valuated flag matroids on ground set up to size 5 are realizable, and give an example where this fails for a flag matroid on 6 elements. (Received January 11, 2021)