1131-05-41 **Eric Swartz*** (easwartz@wm.edu) and **Alex Schaefer**. *Graphs that contain multiply transitive matchings.*

Let Γ be a finite, undirected, connected, simple graph. We say that a matching $\mathcal{M}$ is a *permutable m-matching* if $\mathcal{M}$ contains m edges and the subgroup of $\mathrm{Aut}(\Gamma)$ that fixes the matching $\mathcal{M}$ setwise allows the edges of $\mathcal{M}$ to be permuted in any fashion. A matching $\mathcal{M}$ is a *2-transitive matching* if the setwise stabilizer of $\mathcal{M}$ in $\mathrm{Aut}(\Gamma)$ can map any ordered pair of distinct edges of $\mathcal{M}$ to any other ordered pair of distinct edges of $\mathcal{M}$. These definitions were motivated by a question of Zaslavsky regarding signed graphs. I will discuss constructions and characterizations of graphs with a permutable m-matching, as well as the classification of the graphs with a 2-transitive perfect matching. This is joint work with Alex Schaefer of Binghamton University. (Received June 19, 2017)