

Meeting: 1003, Atlanta, Georgia, SS 24A, AMS Special Session on Design Theory and Graph Theory, I

1003-05-70 **Nathan Kahl*** (nkahl@stevens.edu), Dept. of Mathematical Sciences, Stevens Institute of Technology, Hoboken, NJ 07030, and **Charles Suffel** (csuffel@stevens.edu), Dept. of Mathematical Sciences, Stevens Institute of Technology, Hoboken, NJ 07030. *Enumerator Polynomials and Enumeration Problems on Multigraphs.*

Enumerator polynomials have been used both to generate remarkable polynomial identities and to enumerate structures associated with the combinatorial objects involved in the sums defining the polynomials. We present a class of identities applicable to a wide variety of enumerator polynomials over graphs and use them to develop computational tools applicable to subgraph enumeration problems. A number of old subgraph enumeration results are unified and extended this way, and a number of new results are also obtained. (Received October 05, 2004)