

1112-13-570

**Bethany Kubik**, University of Minnesota Duluth, and **Sean Sather-Wagstaff\***  
([ssather@clemsn.edu](mailto:ssather@clemsn.edu)), Clemson University. *Path ideals of weighted graphs.*

We introduce and study the weighted  $r$ -path ideal of a weighted graph  $G_\omega$ , which is a common generalization of Conca and De Negri's  $r$ -path ideal for unweighted graphs and Paulsen and Sather-Wagstaff's edge ideal of the weighted graph. Over a field, we explicitly describe primary decompositions of these ideals, and we characterize Cohen-Macaulayness of these ideals for trees (with arbitrary  $r$ ) and complete graphs (for  $r = 2$ ). (Received August 11, 2015)