1014-05-1625 **Dominic Lanphier** and **Jason Rosenhouse*** (`rosenhjd@jmu.edu`), James Madison University, Dept. of Mathematics and Statistics, 104 Burruss Hall, Harrisonburg, VA 22801. *The Isoperimetric Numbers of Certain Cayley Graphs of the Projective Special Linear Groups.* Preliminary report.

The isoperimetric number of a graph can be viewed as a measure of the its connectedness. It finds a variety of combinatorial applications, most notably its relation to the eigenvalue spectrum of the graph. The connectedness of the Cayley graphs of the projective special linear groups are especially interesting, because of the relationships between these graphs and certain manifolds of interest to geometers. In this paper we present new upper bounds on the isoperimetric numbers of these graphs. Our results are based on a decomposition theorem on the vertices of the graph. (Received September 28, 2005)