1133-58-314 **Lotfi Hermi***, Department of Mathematics, Florida International University, 11101 S.W. 13 ST., Miami, FL, Miami, FL 33199. *Isoperimetric inequalities for convex cones.*

We use the weighted isoperimetric inequality of J. Ratzkin for a wedge domain in higher dimensions to prove new isoperimetric inequalities for weighted L_p-norms of the fundamental eigenfunction of a bounded domain in a convex cone– generalizing earlier work of Chiti, Kohler-Jobin, and Payne-Rayner. We also introduce relative torsional rigidity for such domains and prove a new Saint-Venant-type isoperimetric inequality for convex cones. Finally, we prove new inequalities relating the fundamental eigenvalue to the relative torsional rigidity of such a wedge domain thereby generalizing our earlier work to this higher dimensional setting, and show how to obtain such inequalities using the Payne interpretation in Weinstein fractional space. (Joint work with A. Hasnaoui) (Received July 31, 2017)