Meeting: 1003, Atlanta, Georgia, SS 16A, AMS Special Session on Inverse Spectral Geometry, I

1003-53-1273 **Emily Proctor*** (eprocto1@swarthmore.edu), Department of Mathematics and Statistics, Swarthmore College, 500 College Ave., Swarthmore, PA 19081. *Isospectral Metrics and Potentials on Classical Compact Simple Lie Groups.*

We prove the existence of multiparameter isospectral deformations of metrics on SO(n) (n = 9 or n $\geq$ 11), SU(n) (n $\geq$ 8), and Sp(n) (n $\geq$ 4). For these examples, we follow a metric construction developed by Schueth who had given one-parameter families of isospectral metrics on orthogonal and unitary groups. Our multiparameter families are obtained by a new proof of nontriviality establishing a generic condition for nonisometry of metrics arising from the construction. We also show the existence of non-congruent pairs of isospectral potentials and nonisometric pairs of isospectral conformally equivalent metrics on Sp(n) for n $\geq$ 6. (Received October 04, 2004)