

**Meeting:** 1004, Bowling Green, Kentucky, SS 6A, Special Session on Representation Theory

1004-22-14            **Hadi Salmasian\*** ([hadi.salmasian@yale.edu](mailto:hadi.salmasian@yale.edu)), Yale University, Mathematics Department,  
P.O.Box 208283, New Haven, CT 06520-8283. *Small Unitary Representations and Decay of Matrix  
Coefficients*. Preliminary report.

We introduce a notion of small unitary representation for a semisimple Lie group. This is a natural generalization of the notion of minimal representation. Previous methods to study small representations, including the work of Howe, Sahi, Weissman and a recent work of Savin, are generally based on abelian harmonic analysis. Using Kostant's cascade of strongly orthogonal roots, we show how a new definition can be given in terms of Kirillov's method of orbits. As a result, we obtain refined estimates on the decay of matrix coefficients, which improve recent results by Li, Zhu and Oh. (Received November 29, 2004)