1087-11-128 **S. Ali Altug*** (altug@math.columbia.edu). *A New Analytic Approach to the Trace Formula.*

The Arthur-Selberg trace formula, which relates the spectral properties of a group to its geometry, is a main tool in the theory of automorphic representations. It has been used successfully in the context of comparing spectra of different groups to get cases of Langlands functoriality. However, (as noted by Langlands himself) most cases of functoriality fall out of this scope and one is naturally lead to investigate other methods to analyze automorphic representations. In this talk we will report on recent ongoing work of the speaker on a new analytic approach to the trace formula on $GL(2)$, which allows one to use it in a non comparative way to analyze automorphic representations and their functorial lifts. (Received December 01, 2012)