1014-47-324 **Radu V Balan*** (radu.balan@siemens.com), Siemens Corporate Research, 755 College Road East, Princeton, NJ 08540. *A Noncommutative Wiener Lemma and A Faithful Tracial State on Banach Algebras of Time-Frequency Shift Operators.* Preliminary report.

In this paper we analyze the Banach *-algebra of time-frequency shifts with absolute summable coefficients. We prove noncommutative versions of the Wiener lemma. We also construct a faithful trace on this algebra that allows us to prove such algebras are free of Hilbert-Schmidt operators. As a corollary we obtain a special case of the Heil-Ramanathan-Topiwala conjecture regarding linear independence of finitely many time-frequency shifts of one L^2 function. (Received September 09, 2005)