1018-81-28 **Raghu Gompa*** (raghu.gompa@jsums.edu), 204 Shadow Wood Drive, Clinton, MS 39056.

Two-level atoms: A normal form approach. Preliminary report.

A perturbation theory based on normal form techniques is studied within a rigorous Hilbert space formalism in the context of Schrödinger initial value problems associated with Hamiltonian describing two-level atoms to arrive at approximations that deviate in norm from the exact solution by a term of order $\varepsilon^{m+1}t$ provided the initial vector is restricted to an appropriate linear submanifold. (Received February 04, 2006)