1010-35-138 **Grozdena Todorova*** (todorova@math.utk.edu), Department of Mathematics, University of Tennessee, Knoxville, TN 37996. *Strong instability of standing waves for the nonlinear Klein-Gordon equation and Klein-Gordon-Zakharov system.*

The orbital instability of ground state standing waves $e^{i\omega t}\phi_\omega(x)$ for the nonlinear Klein-Gordon equation has been known in the domain of all frequencies ω for the supercritical case and for frequencies strictly less than a critical frequency ω_c in the subcritical case. We prove the strong instability of ground state standing waves for the entire domain above. For the case when the frequency is equal to the critical frequency ω_c we prove strong instability for all radially symmetric standing waves $e^{i\omega_c t}\varphi(x)$. We prove similar strong instability results for the Klein-Gordon-Zakharov system. (Received August 23, 2005)