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**Hao Jia\*** ([jiahao@math.uchicago.edu](mailto:jiahao@math.uchicago.edu)), 1450 E 55th Pl Apt 325S, Chicago, IL 60637. *Generic and Non-generic behavior of solutions to defocusing energy critical wave equation with potential, in the radial case.*

The long time behavior of dispersive equations containing nontrivial dynamics has been studied for many models, due to its physical relevance as well as intrinsic mathematical interest. The main relaxation mechanism is not energy dissipation, but propagation of energy into large distances, which brings new mathematical challenges. In this talk, we report some results in the context of defocusing energy critical wave equation, with an attractive potential. The potential bounds many steady states (the ground states and many excited states). We note that there could be large stable excited state, although all small excited states are unstable. We show that for generic potential, the solution scatters to one of the steady states. Moreover, each unstable excited state attracts only a finite co-dimensional manifold of solutions in the energy space, hence scattering to unstable steady state is non-generic. This is based on joint works with B.P. Liu, W. Schlag and G.X. Xu. (Received August 11, 2015)