Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Effect of Magnetic Field in Carbon Nanotubes YURIY MALOZOVSKY, ANDREW KINCHEN, Southeastern Louisiana University — We study the effect of magnetic field in the armchair carbon nanotubes (CNT). We model the carbon nanotube as a tubule with electrons confined to the surface of the tubule by an attractive delta-function potential. We derived the dynamic pair interaction potential between two electrons in the tubule in the presence of magnetic field. Dispersion of plasma modes at different values of angular momentum, and single-particle excitations in the presence of the magnetic field are derived as well. The self-energy part due to the interaction of an electron with plasma modes in magnetic field is also discussed.

Yuriy Malozovsky
Southeastern Louisiana University

Date submitted: 04 Dec 2005 Electronic form version 1.4