Electroabsorption of Single-Walled Carbon Nanotubes\textsuperscript{1} W. JOSHUA KENNEDY, Z. VALY VARDENY, University of Utah — We have measured the electric field modulated absorption (EA) of single-walled carbon nanotubes (SWNT) isolated in a poly-vinyl alcohol matrix (PVA). The derivative-like structure of the EA indicates that the low energy absorption bands are excitonic in origin. We report the voltage, temperature, and polarization dependence of the EA spectrum. Additionally, the sensitivity of the EA spectrum to the energy levels of the SWNT allows us to use EA spectroscopy to observe shifts in the absorption bands of our samples induced by various external fields that are difficult to resolve using CW techniques. Several examples will be discussed.

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