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Electrostatics of Straight and Wiggly Nanotubes in External Electric Field[1] MIKHAIL RAIKH, EUGENE MISHCHENKO, University of Utah — Distribution of charge induced in a straight nanotube (NT) by external electric field parallel to the NT axis is found as a function of the NT length and radius. As the voltage drop along the NT exceeds the gap, positive and negative charge regions emerge at the NT ends. These regions are separated by a neutral strip at the NT center. External field is unscreened within the neutral strip, while it is strongly suppressed outside the strip. For a NT of a wiggly shape, the induced charge distribution represents alternating positively and negatively charged regions separated by neutral strips.

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