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**Measurements on quantum capacitance of individual single walled carbon nanotubes** JUNFENG DAI, JUNG YUL LI, HUALING ZENG, XIAODONG CUI, the University of Hong Kong — We report measurements of the quantum capacitance of individual semiconducting and small band gap single walled carbon nanotubes (SWNTs). The observed quantum capacitance,  $82 \text{ aF}/\mu\text{m}$  for a semiconducting SWNT with chiral index (16,8) and  $10.3 \text{ aF}/\mu\text{m}$  for a small band gap SWNT upon Fermi level lying at the first subband are remarkably smaller than those originating from the density of states. We attribute the discrepancy to a strong electron correlation in SWNTs and derive the Luttinger parameter  $g$  of 0.25–0.3 for the (16,8) SWNT and of 0.32 for a small band gap SWNT.

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