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Electronic transport in intermediate sized carbon nanotubes[1]
MARKUS AHLSKOG, University of Jyvaskyla, Department of Physics, DAVIE MTSUKO, ANTTI JUUTILAINEN, University of Jyvaskyla — We have measured low temperature transport properties of multiwalled carbon nanotubes (MWNT) of different diameters in the range 2-10 nm [1]. In nearly all samples the gate dependent conductance exhibits a gap whose size increases with decreasing tube diameter and increasing electrode separation. This so called transport gap is attributed, based on the experimental findings, on a combination of localization effects and narrow diameter induced gaps in the electronic band structure.

[1] M. Ahlskog, O. Herranen, A. Johansson, J. Leppäniemi, and D. Mtsuko, Phys. Rev. B **79**, 155408 (2009).

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