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Interference patterns in field emission images of Multi-Walled Carbon Nanotubes GEORGIANNA MARTIN, P.R. SCHWOEBEL, University of New Mexico — Carbon nanotubes are of interest due to their unusual chemical and electrical characteristics and have thus been suggested for use in a wide variety of applications including field emission cathodes. However, there are indications that their emission characteristics, like those of most field emitters, are sensitive to their vacuum environment. Interference patterns in the field emission images of nanotubes have been observed by others and associated with coherent electron emission. Here we report the observation of interference patterns with either a central node or anti-node which appear to be associated with phase shifts introduced by surface adsorbates. This work is supported by the NSF under grant number ECS-0245682.

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