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Observation of Standing Waves on the GaN(0001) Pseudo (1x1) Surface by Scanning Tunneling Microscopy at Room Temperature L. LI, Y. QI, G. SUN, M. WEINERT, University of Wisconsin, Milwaukee — The metallic pseudo-1x1 surface, consists of 2 to 2.5 ML Ga on top of the Ga-terminated GaN(0001), provides an ideally confined 2D electron gas (2DEG), which gives rise to complex standing wave patterns. Even at room temperature, these patterns can be observed by scanning tunneling microscopy (STM) and spectroscopy (STS). The analysis of the modulation of the local density of states within various confinement geometries as a function of the bias voltage shows that nearly free-electron like energy dispersive surface states are being probed.

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