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Kelvin Force Microscopy of 1×1 and $\sqrt{3} \times \sqrt{3}$ phases of Pb/Si(111)¹ E. D. WILLIAMS, W. G. CULLEN, MASA ISHIGAMI, Department of Physics, University of Maryland, College Park, Maryland 20742 — Using non-contact atomic force microscopy, we have determined the contact potential difference (CPD) of 1×1 and $\sqrt{3} \times \sqrt{3}$ phases in the Pb/Si(111) system. Furthermore, we have tracked the barrier formation layer-by-layer by observing multilayer structures. We will discuss the origin of the observed CPD contrast between different phases and thicknesses of the Pb films in light of recent theoretical calculations. In addition, we will present the effect of the reduced dimensionality to the observed electrostatic potential variation at boundaries between different phases.

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