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Electronic Structures of Hydrogen and Oxygen Adsorbed Tungsten (3, 2, 0) and Tungsten (8, 7, 0) Surfaces[1] ZHUO BAO, Physics Department, University of Oregon, AARON BOSTWICK, ELI ROTENBERG, Advanced Light Source, LBNL, STEPHEN KEVAN, Physics Department, University of Oregon — The Valence band electronic structues of Hydrogen adsorbed and Oxygen adsorbed Tungsten stepped surfaces, Tungsten (3, 2, 0) and (8, 7, 0) surface are investigated using angular-resolved photoemission techniques and ab-initio electronic structure calculation methods. The band features of surface states at different Hydrogen and Oxygen coverages are experimentally distinguished by using photon-energy scanning method. Quasi-one- dimensional band features are found in the surface states with saturated Oxygen coverages of both stepped surfaces. The effects of adsorbate coverages on dimensionalities of surface electronic states are studied using high-resolution band mapping methods and ab-initio calculation methods.

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