

# **Low-dimensional Electronic States on Metal Stepped Surfaces Studied by Angle-Resolved Ultraviolet Photoelectron Spectroscopy at SORIS Beamline**

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## **Abstract**

Angle-resolved ultraviolet photoelectron spectroscopy using synchrotron radiation has been applied for the study of low-dimensional electronic states on Cu(755) stepped surface [=6(111)x(100)]. A prominent surface-state peak is observed with maximum binding energy of about 0.34 eV below the Fermi level. The surface-state peak shows parabolic dispersion from the band bottom upwards to the Fermi level almost identically in both directions parallel and perpendicular to the steps. The peak shape is also identical in both the directions. Based on the isotropy of photoelectron spectra in both the directions we suppose that the surface state propagate on the (111) planes rather than on the average surface of (755).

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