

Abstract Submitted
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Unoccupied states on Graphene/Cu(111) system¹ SHENGMIN ZHANG, XUEFENG CUI, CONG WANG, HRVOJE PETEK², University of Pittsburgh, Department of Physics and Astronomy — Based on the Graphene/Cu(111) system we prepared by the chemical vapor deposition method, we explored the surface states and image potential states by two photon photoemission (2PPE) and angle-resolved photoemission using ultrashort laser pulses. Graphene on the Cu(111) surface can be recognized through 2PPE spectra, based on the theoretical band structure, which showed clear angle dispersions under different wavelength measurements. In addition, the surface state of Cu(111) could also be observed in the 2PPE spectra, and under some certain wavelength, there is a strong resonance of the surface state on Cu(111) and the image potential state on Graphene. With the angle-resolved photoemission, the effective masses of the surface state and image potential state were obtained by simply fitting the dispersion curves.

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