

Abstract Submitted  
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**High-resolution** **angle-**  
**resolved photoemission studies of YbRh<sub>2</sub>Si<sub>2</sub> using 7 eV laser** S.-K. MO,  
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HUSSAIN, Advanced Light Source, LBNL, Z.-X. SHEN, Stanford University and  
SLAC National Lab — We present angle-resolved photoemission spectra of prototyp-  
ical heavy fermion compound YbRh<sub>2</sub>Si<sub>2</sub> measured with 7 eV ultraviolet laser. Much  
improved energy and momentum resolutions enable us to resolve the sharp weakly  
dispersing peaks at the lowest energy of single-electron spectra. This coherent state  
grows in intensity and weight as temperature decreases below a characteristic tem-  
perature. The characteristic temperature is not only different from the single-ion  
Kondo temperature of YbRh<sub>2</sub>Si<sub>2</sub> derived from thermodynamic measurements, it is  
of the same scale as the energy and the lifetime of the coherent state.

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