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Electronic structure and properties of heavy fermion system $CeAuBi_2$ MATTEO MICHIARDI, FABIO BOSCHINI, ELIA RAZZOLI, GIORGIO LEVY, ILYA ELFIMOV, ANDREA DAMASCELLI, Dept. of Physics, University of British Columbia,Vancouver, Canada, SOREN ULSTRUP, CHRIS JOZWIAK, AARON BOSTWICK, ELI ROTENBERG, Advanced Light Source, E.O. LBNL, Berkeley, California, USA, HALYNA HODOVANETS, CHRIS ECKBERG, JOHNPIERRE PAGLIONE, Center for Nanophysics and Advanced Materials, University of Maryland, Maryland, USA — Rare-earth intermetallic compounds are an excellent platform to realize a variety of physical phenomena stemming from strong electron correlation, such as Kondo effect, Mott transition, and heavy fermion behavior. Here we present a study of the new heavy fermion compound $CeAuBi_2$. This material exhibits spin-density-wave antiferromagnetic ordering below 13 K and a magnetic-field-tuned quantum critical point. The electronic structure was investigated with Angle Resolved Photoemission Spectroscopy (ARPES), which reveals a low energy spectrum dominated by strongly dispersing metallic bands and localized f-states with weak hybridization effects. By means of resonant ARPES we were able to selectively study the Ce^{3+} 4f character of the flat bands situated few meV from the Fermi level. The experimental dispersion is compared to ab-initio band structure calculations for a microscopic understanding of the electronic structure.

Matteo Michiardi
Dept. of Physics, University of British Columbia,Vancouver, Canada

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