Abstract Submitted
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**ARPES measurements of the 3-Dimensional Fermi Surface of $LaRu_2Si_2$**[1] J.D. DENLINGER, Lawrence Berkeley National Lab, F. WANG, J.W. ALLEN, Univ. of Michigan, KAI ROSSNAGEL, Univ. of Kiel, J.L. SARRAO, Los Alamos National Lab — $LaRu_2Si_2$ is important as the $f^0$ reference compound for heavy fermion systems $CeRu_2Si_2$ and $CeRu_2Ge_2$ which are hallmarks for the agreement between dHvA experiments and a renormalized-LDA description of the heavy mass quasiparticle Fermi surface (FS). Recent advancements in angle resolved photoemission (ARPES) capabilities including angular resolution and automation allow the measurement of finer electronic structure detail as well as the mapping of larger regions of k-space. These experimental improvements combined with photon energy dependent excitation are used to probe $k_\perp$-variations in the $LaRu_2Si_2$ FS topology. Normal emission band structure maps newly reveal closed FS contours of small Z-centered hole pockets, thereby refining the value of the crystal inner potential. Wide-angle FS maps at three different photon energies also show clear signatures of three-dimensionality and incomplete $k_\perp$-broadening, including (i) new evidence for an LDA-predicted narrow electron pocket at the P-point and (ii) an electron-like connectivity between FS contours centered around $\Gamma$ and the famous large hole-like 'pillow' pocket centered on Z.

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