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Supplementary Materials for

Dirac nodal surfaces and nodal lines in ZrSiS

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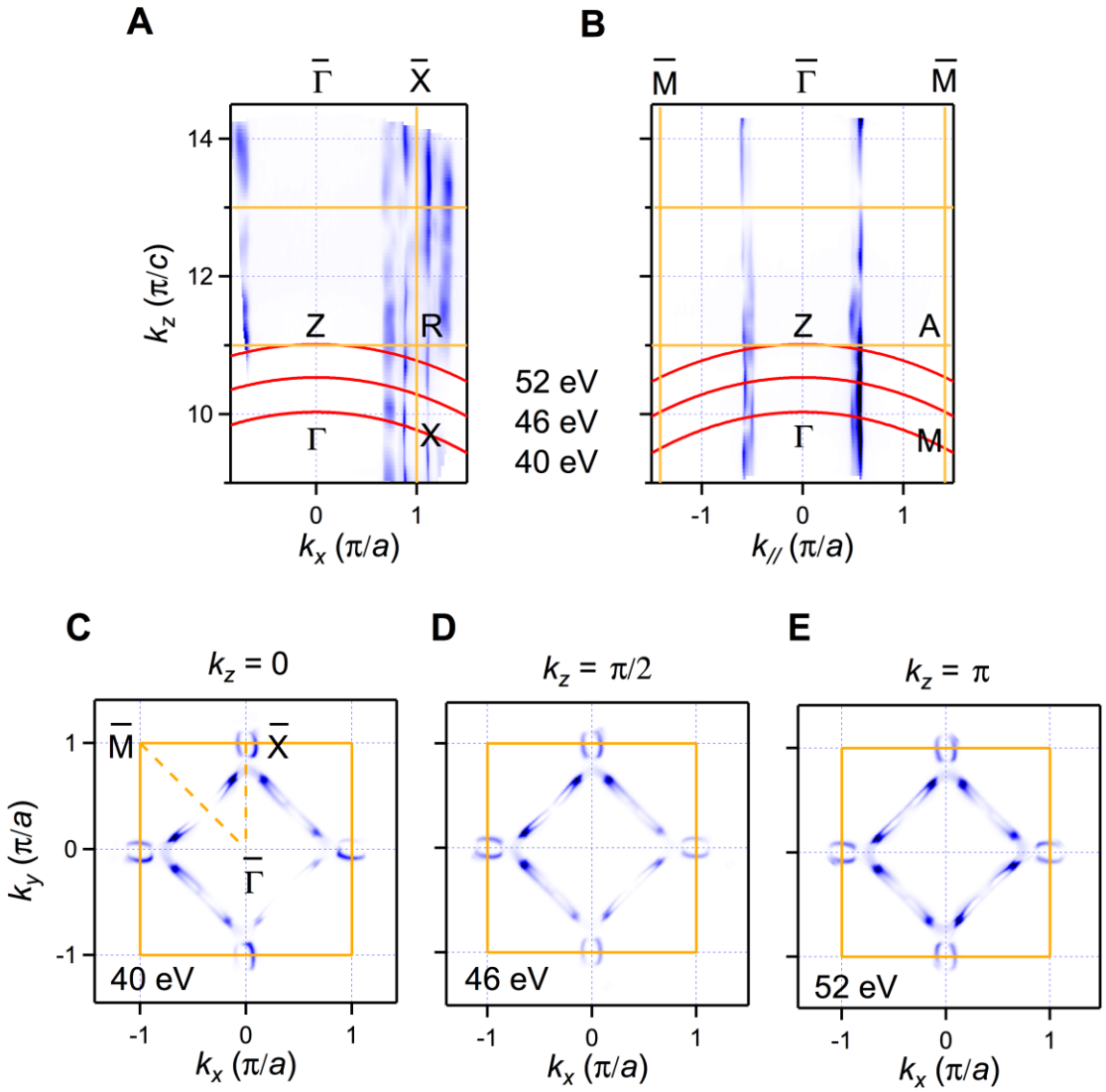

Fig. S1. ARPES data collected with VUV lights. (**A** and **B**) FSs in the Γ-Z-R-X and Γ-Z-A-M planes, respectively, measured with varying photon energies from 30 to 100 eV. The orange lines indicate the boundary of Brillouin zones. (**C** to **E**) FSs measured with $h\nu$ = 40, 46, and 52 eV, respectively.

To illuminate the k_z dispersions in the angle-resolved photoemission spectroscopy (ARPES) data with vacuum ultraviolet (VUV) lights, we have performed ARPES measurements along Γ-X and Γ-M directions in a range of photon energy ($h\nu$) from 30 to 100 eV. As seen in fig. S1 (A and B), the Fermi surfaces (FSs) measured in the VUV range exhibit straight lines along k_z, in sharp contrast to

periodic warping in the soft X-ray data in Fig. 3 (C and D). As there are no periodic modulations along k_z in the VUV data, we calculate the k_z values with an inner potential of 23 eV, which is extracted from our soft X-ray data, and a lattice constant along *c* axis of 8.055 Å. We also measured the FSs with $h\nu$ = 40, 46 and 52 eV, approximately corresponding to the $k_z = 0$, $\pi/2$, and π planes, respectively. As seen in fig. S1 (C to E), the measured FSs with VUV lights are almost the same, in sharp contrast to the remarkable changes in the soft X-ray data in Fig. 3 (G and H). The VUV ARPES results in fig. S1 show negligible $k_z$dispersions and are well reproduced by our slab calculations of the surface states in Fig. 1F, indicating that the VUV ARPES mainly detects the surface states of ZrSiS.