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**Revealing the electronic structure of $USb_2$ using femtosecond optical pulses** JINGBO QI, TOMASZ DURAKIEWICZ, E. BAUER, R. BAUMBACH, K. GOFRYK, Los Alamos National Laboratory, T. KLIMCZUK, ITU Karlsruhe, P. RISEBOROUGH, Temple University, ANTOINETTE TAYLOR, ROHIT PRASANKUMAR, Los Alamos National Laboratory — $USb_2$ is a very interesting moderately heavy system, as it displays dispersive 5f bands as well as the first example of a clear kink structure in f-electron systems. This material also exhibits a renormalized zone-centered hole-like band, driven by boson-mediated interband scattering processes. Employing ultrafast optical spectroscopy, we explored the nature of the boson participating in this band renormalization, and explicitly characterized the gap structures near the Fermi surface in $USb_2$ for the first time. Our results reveal new physical properties of this material, which have not previously been unveiled by other experimental methods.

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