

Abstract Submitted  
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**Evolution and Control of Electronic Structures near the Interface of Complex Oxide Heterostructure  $\text{SmTiO}_3/\text{SrTiO}_3$** <sup>1</sup> RYO MORI, University of California, Berkeley and Lawrence Berkeley National Laboratory, PATRICK MARSHALL, BRANDON ISAAC, University of California, Santa Barbara, JONATHAN DENLINGER, Lawrence Berkeley National Laboratory, SUSANNE STEMMER, University of California, Santa Barbara, ALESSANDRA LANZARA, University of California, Berkeley and Lawrence Berkeley National Laboratory — The confined electron system in the quantum well of the transition metal oxide,  $\text{SrTiO}_3$ , embedded in the rare earth titanate,  $\text{SmTiO}_3$ , shows unique properties, such as high carrier density, fermi liquid to non-fermi liquid transition, and pseudo-gap, which can be controlled by changing the shape of the quantum well. We will present a distinct difference in the electronic structures between the different quantum well structures obtained by angle-resolved photoemission spectroscopy (ARPES) measurements, suggesting the possibility to control the orbital character and the electron correlation near the interface as well as carrier density.

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