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Investigation of the Spatially Resolved Electronic Structure of Single Layer WS2 on Transition Metal Oxide Surfaces JYOTI KATOCH, THE OHIO STATE UNIVERSITY, SREN ULSTRUP, ROLAND KOCH, DANIEL SCHWARZ, Advanced Light Source, Lawrence Berkeley National Laboratory, SIMRANJEET SINGH, THE OHIO STATE UNIVERSITY, KATHY MCCREARY, Naval Research Laboratory, HYANG KEUN YOO, Advanced Light Source, Lawrence Berkeley National Laboratory, JINSONG XU, THE OHIO STATE UNIVERSITY, BERRY JONKER, Naval Research Laboratory, ROLAND KAWAKAMI, THE OHIO STATE UNIVERSITY, AARON BOSTWICK, ELI ROTENBERG, CHRIS JOZWIAK, Advanced Light Source, Lawrence Berkeley National Laboratory — The family of semiconducting single layer (SL) transition metal dichalcogenides (TMDs) have lately been intensely studied, owing to the strong coupling between spin and valley degrees of freedom as well as the presence of strongly bound excitons. The choice of supporting substrate is known to strongly influence these properties. We set out to investigate the electronic properties of CVD grown SL WS2 transferred onto the dielectric oxide materials SrTiO3 and TiO2. By using a combination of photoemission electron microscopy (PEEM) and angle-resolved photoemission (ARPES) with micrometer focus we obtain simultaneous spatial, momentum and energy-resolved information about SL WS2 on a polar (SrTiO3) and a nonpolar (TiO2) surface for the first time.

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