

Abstract Submitted  
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**Femtosecond Time Resolved Spectroscopic Measurements of Mono and Few-layers WS<sub>2</sub>** SHROUQ ALEITHAN, SUDI KSHA KHADKA, MAX LIVSHITS, JEFFERY RACK, ERIC STINAFF, Ohio University — Methods for producing samples of transition metal dichalcogenide monolayers, a new two-dimensional direct-band gap semiconductor potentially useful for applications in electronics and photonics, have dramatically improved from mechanical and chemical exfoliation, to current chemical vapor deposition (CVD) techniques. We present an experimental investigation carried out to study the exciton dynamics in mono-to-few layer sheets of WS<sub>2</sub>. The experiment was performed on commercially CVD grown WS<sub>2</sub> on a sapphire substrate employing femto-second transient absorption spectroscopy and microscopy. The sample was excited using a pump pulse of 405nm and then probed with differential absorption spectra over the spectral range of 350 nm - 800 nm, using white continuum. These results should help further the understanding of exciton dynamics in two dimensional sheets of WS<sub>2</sub>.

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