

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**ARPES study of CDW energy gap in 2H-TaS<sub>2</sub>**<sup>1</sup> UTPAL CHATTERJEE, JUNJING ZHAO, KAPILA WIJAYARATNE, University of Virginia, MERCOURI KANATZIDIS, Northwestern University — We have conducted temperature dependent Angle Resolved Photoemission Spectroscopy (ARPES) study of the electronic structure of 2H-TaS<sub>2</sub>, a canonical Charge Density Wave (CDW) system. We have mapped its entire Fermi surface, from which it is evident that CDW order in 2H-TaS<sub>2</sub> is not due to Fermi surface nesting. Similar conclusion has been reached for 2H-NbSe<sub>2</sub> in a number of recent studies. Our measurements have detected particle-hole asymmetric CDW energy gap around the entire K-centric Fermi surface, however, no energy gap was detected around the Gamma-centric Fermi surface. Furthermore, our temperature-dependent measurement shows that the CDW energy gap persists even above the CDW transition temperature, which is similar to what has been observed in case of 2H-NbSe<sub>2</sub>.

<sup>1</sup>This work was supported by the National Science Foundation under Grant No. DMR-1454304 and by the Jefferson Trust at the University of Virginia.

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Date submitted: 11 Nov 2016

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