Transport Properties Across Misoriented Bilayer MoS2 using Ab-initio Calculations\textsuperscript{1} KUAN ZHOU, SUPENG GE, DARSHANA WICKRAMARATNE, ROGER LAKE, Univ of California - Riverside — Fabrication of electrical and opto-electronic devices with vertically stacked transition metal dichalcogenides (TMDCs), leads to interfaces that are misoriented. Prior experimental and theoretical studies of misorientation in graphene bilayers demonstrated that a few degrees of misorientation is sufficient to decouple the low energy states of the individual layers. Experimental and ab-initio calculations have shown the bandgap of misoriented bilayer MoS remains indirect. The transport properties across the misoriented interface of the bilayer TMDCs is currently unknown. The coherent interlayer transmission across two stacks of MoS is calculated for unrotated and rotated MoS bilayers using ab-initio calculations. The energy dependence of the interlayer transmission is analyzed.

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