## Joint Annual Meeting of the Swiss and Austrian Physical Society 2023



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## [155] Electronic properties of single layer molybdenum disulphide-on-gold heterostructure as a function of twist angle

Thursday 7 September 2023 18:00 (15 minutes)

Transition metal dichalcogenides like molybdenum disulphide (MoS2) have been studied on metal surfaces, but little is known about twist angle-dependent electronic properties of these simple heterostructures, which indeed offers tremendous opportunities to design functional quantum materials. In this talk, we present a detailed scanning tunnelling microscopy and spectroscopy investigation of electronic properties of monolayer MoS2 on gold as a function of twist angle. We find that the semi-conducting band edges and hence the band gap are modulated at the moiré wavelength (moiré between MoS2 and gold) and this modulation progressively vanishes with increasing twist angle.

**Theoretical Work** 

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