

## “Probing the linear and second-order nonlinear response of atomically thin transition metal dichalcogenides by optical spectroscopy”

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**Abstract:** Atomically thin transition metal dichalcogenides is a group of novel semiconducting  $\text{\AA}$  two-dimensional crystals. Their electronic properties are distinct from the corresponding bulk materials due to reduced dimensionality and altered symmetry properties. Motivated by the important optical response of the fundamental excitations in these materials, as well as their potential to be used as building blocks for new two-dimensional photonics devices, we measured their linear and second-order nonlinear dielectric response by optical spectroscopy. The linear response demonstrates strong overall light-matter interaction, and shows clear signature of excitonic optical transitions. The second-order nonlinear response reveals layer-by-layer variation in the symmetry of the atomically thin crystals, as well as their in-plane rotational symmetry.

**Bio:** Yilei Li recently received his PhD degree in Physics at Columbia University and he is continuing working in Prof. Tony Heinz's group.