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Optical and vibrational properties of MoS2

Ludger Wirtz
Physics and Materials Science research unit, University of Luxembourg

Following the hype on graphene, other layered materials are recently achieving a lot of attention. One of them is molybdenum disulfide. Contrary to graphene, MoS2 has a band-gap of about 2 eV and might thus be a suitable candidate for electronics and optics applications. I will give an overview over the properties of the material and summarize the ongoing debate on the mobility of the material. I will also present our own recent work on the phonon dispersion of of bulk and few-layer MoS2, where the origin of the anomalous Davydov splitting is still not ultimately clarified. Furthermore, I will discuss the influence of excitonic effects and spin-orbit splitting on the optical properties of MoS2.