**Band gap modulation of WS2/WSe2 heterobilayer under out-of-plane pressure**

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Photoluminescence (PL) has been performed for WS2/WSe2 heterobilayer under pressure. Interestingly, the PL peaks resulting from interlayer excitons show a small splitting, and the energy of these peaks remains nearly unchanged under pressure. We perform first-principles calculations for the WS2/WSe2 moiré supercell at three main regions with different stacking arrangements. A thick layer of inert gas is filled in the region between periodic structures so that the out-of-plane pressure can be evaluated. We extract the relation between the interlayer distance and the out-of-plane pressure, which is difficult to obtain through current experimental techniques. Band structures under pressure will also be presented, which show good agreement with the experimental results.