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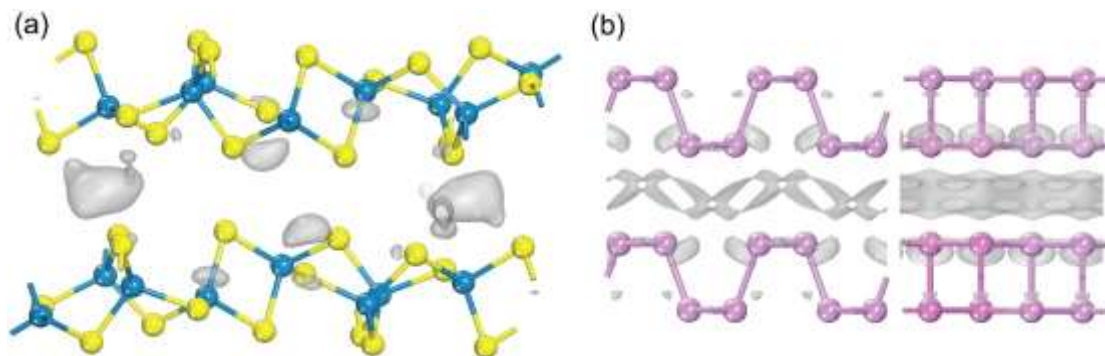
## Weak Interlayer Interaction in Anisotropic GeSe<sub>2</sub>

As an emerging anisotropic material with wide band gap, GeSe<sub>2</sub> is regarded as a promising candidate for polarization-dependent devices, such as polarization-sensitive photodetectors and optical waveplates. Except for in-plane anisotropies, another unique property, weak interlayer coupling, is firstly discovered in this work. Here, electronic structures of GeSe<sub>2</sub> are investigated and a minor change is found from monolayer to bulk. Cleavage energy, interlayer binding energy and interlayer differential charge density are also calculated, demonstrating that GeSe<sub>2</sub> processes much weaker interlayer coupling when compared with BP, a typical represent of anisotropic materials. Experimental studies including Raman spectra of different thickness and temperature-dependent Raman spectroscopy further confirm weakly coupled layers in GeSe<sub>2</sub>. Our results introduce GeSe<sub>2</sub> as a complement to anisotropic two-dimensional material family with weak interlayer interaction.

### References

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### Figures



**Figure 1:** Interlayer differential charge density of (a) GeSe<sub>2</sub> and (b) BP, respectively.