Charge density waves and degenerate modes in exfoliated monolayer 2H-TaS$_2$

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Figure S1: Probing CDW in 10 nm thick TaS$_2$. Raman spectra for 10 nm thick TaS$_2$ acquired during (a) cooling and (b) warming cycles.

By employing the Phonopy package, we can spatially visualize the atomic vibrations at a particular k point with a specific phonon band. Therefore, the figures for two degenerate CDW modes in 3x3x1 unit cell structure of monolayer 2H-TaS$_2$ are displayed. The corresponding animations are available as separate files.
Figure S2  The degenerate breathing motion (Breathing mode) of CDW mode with frequency $f=155.6691$ cm$^{-1}$. The right figure shows the top view of the breathing mode.

Figure S3  The degenerate wiggling motion (Wiggle mode) of CDW mode with frequency $f=155.6718$ cm$^{-1}$. The right figure shows the top view of the Wiggle mode.