

# Supplementary Information for “Pairing mechanism and superconductivity in pressurized $\text{La}_5\text{Ni}_3\text{O}_{11}$ ”

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### A. PHONON SPECTRUM OF $\text{La}_5\text{Ni}_3\text{O}_{11}$

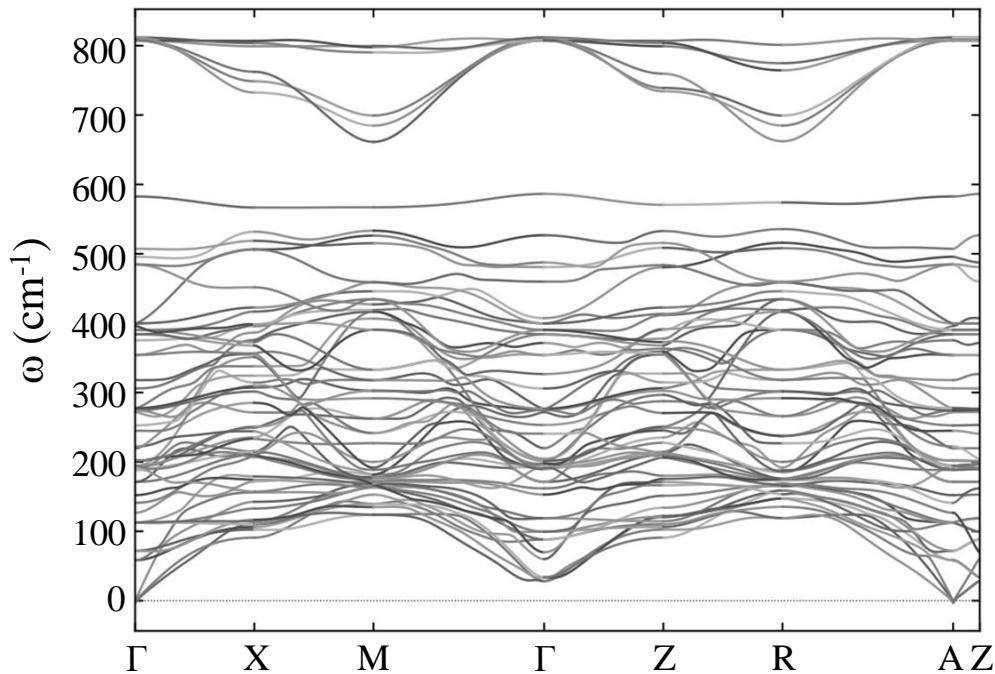


FIG. S1: Phonon spectrum of the  $P4/mmm$  (No. 123) phase  $\text{La}_5\text{Ni}_3\text{O}_{11}$  under high pressure.

### B. BAND STRUCTURES OF $\text{La}_5\text{Ni}_3\text{O}_{11}$ AT AMBIENT AND HIGH PRESSURE

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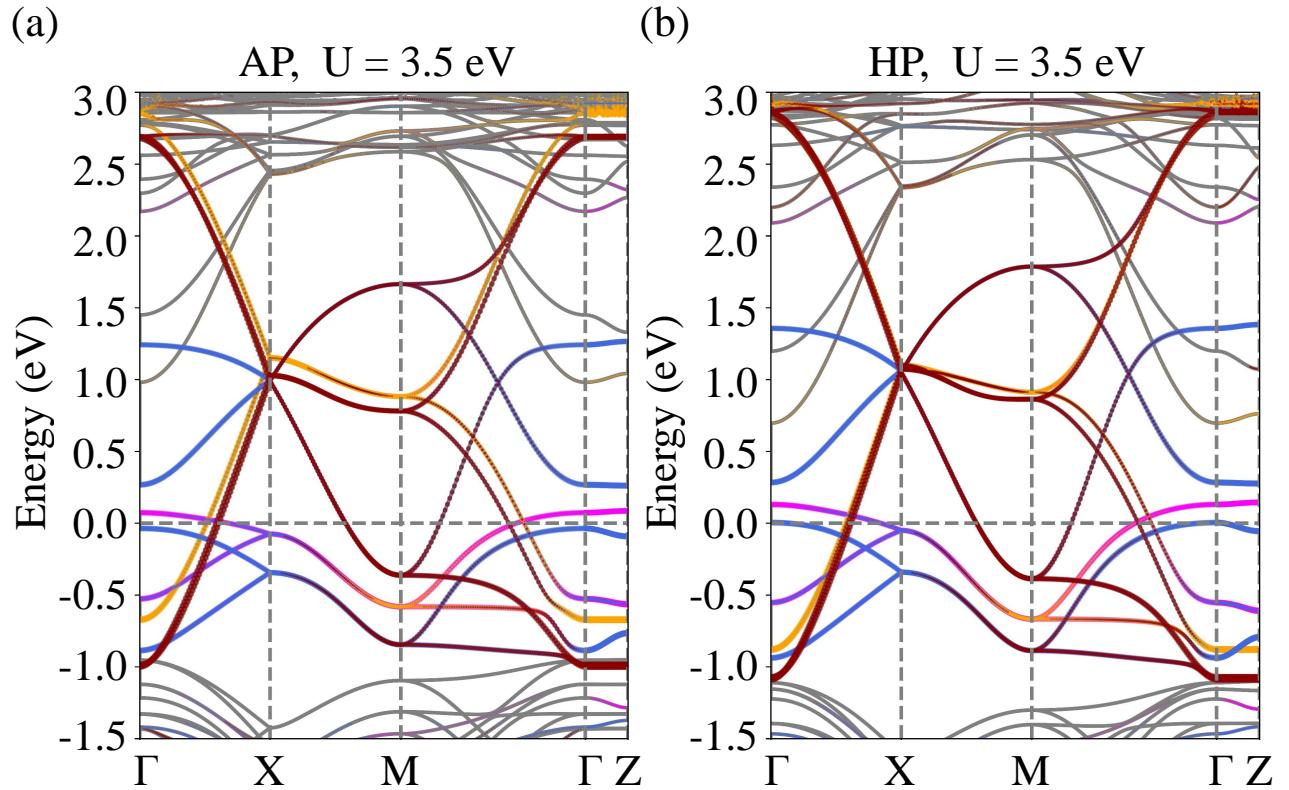


FIG. S2: (color online) Band structures of  $\text{La}_5\text{Ni}_3\text{O}_{11}$  at ambient pressure (a) and high pressure(b).