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Investigation of strain effects in the charge density waves of $2H$-$NbSe_2$ KANE SCIPIONI, ILIJA ZELJKOVIC, DANIEL WALKUP, Boston College, YOSHINORI OKADA, WPI / AIMR, Tohoku University, WENWEN ZHOU, VIDYA MADHAVAN, Boston College — The transition metal dichalcogenide $2H$-$NbSe_2$ possesses coexisting superconducting and charge density wave (CDW) ordered states, which possibly compete below the critical transition temperature, $\sim$7.2K. Previous studies of this system have seen that the CDW is very susceptible to alterations due to local strain. This suggests proximity to a quantum critical point. In this study, we use scanning tunneling microscopy and spectroscopy to investigate the intimate relationship between mechanical strain and the electronic properties of $2H$-$NbSe_2$, and observe the evolution of electronic states on atomic length scales.

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