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Scanning tunneling microscopy at 70 mK in the dichalcogenide superconductor $TaSe_2$ JOSE GALVIS, HERMANN SUDEROW, SEBASTIAN VIEIRA, Laboratorio de Bajas Temperaturas, Departamento de Física de la Materia Condensada, Facultad de Ciencias, Universidad Autónoma de Madrid, Spain — We present scanning tunneling microscopy and spectroscopy measurements of the layered dichalcogenide $2H$-$TaSe_2$, performed in a dilution refrigerator cryostat equipped with a three axis superconducting magnet. In this compound superconductivity and charge density wave (CDW) ordering coexist below $200mK$. We find CDW order corresponding to hexagonal ($2H$) symmetry, but we also find areas where CDW order corresponding to trigonal ($1T$) symmetry appears. We study the superconducting density of states as a function of position and magnetic field at $70mK$ and relate the results to the CDW patterns.

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