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Changes in the superconducting temperature by pressure in Nb₃Sn and its influence in the martensitic transition. RICHART FALCONI, UJAT, FRANCISCO MORALES, ROBERTO ESCUDERO, IIMUNAM, R. WEBB, UCSD — High pressure experiments performed in a Nb₃Sn single crystal shows changes on the superconducting temperature and in the martensitic transition. Specific heat measurements performed in this crystal shows an anomaly at about 50 K associated to the martensitic transition. At ambient pressure, the electrical resistivity as a function of temperature shows a T_C of 18.7 K with a transition width ΔT_C (10 to 90 %) of 0.7 K. At low temperatures the R vs T curve show a T^2 behavior, specifically in the temperature range from 52 down to 23 K. The superconducting transition temperature decreases in linear form with a rate $dT_C/dP = - 0.79$ K/GPa. The results are discussed in terms of the pressure effects on the martensitic transition via changes in the density of electronic states.

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