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DHVA EFFECT IN NB3SB

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FM 3 dHvA Effect in Nb₃Sb.* A. J. ARKO, Argonne National Laboratory and Z. FISK, U. of California at San Diego.--We have observed dHvA oscillations in Nb₃Sb, a compound having the β -tungsten (A-15) crystal structure and a superconducting transition temperature $T_c \approx 0.2K$. Specimens with resistance ratios ≈ 90 were grown using iodide vapor transport. Measurements were made in fields up to 70kG and temperatures down to 0.5K. Frequencies associated with four different pieces of Fermi surface were observed with magnitudes ranging from 0.5×10^6 Gauss to 25×10^6 Gauss. One frequency branch is consistent with a closed surface located at Γ or R in the simple cubic Brillouin zone, while two other sets of frequencies are consistent with closed surfaces at X or M. A fourth branch appears to be part of a larger, possibly open sheet of Fermi surface. While no band structure calculations exist for this material for comparison with the data, it is hoped that the present work will stimulate additional effort in this important class of materials.

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