The de Haas-van Alphen Effect in Antimony

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Abstract

The de Haas-van Alphen Effect in antimony single crystals was studied by means of a torque method at liquid helium temperature in magnetic fields up to 23 kilogauss, which were applied parallel to the trigonal-bisectrix, the trigonal-binary and the binary-bisectrix planes. New carrier oscillation periods were observed in addition to the periods corresponding to the tilted ellipsoidal Fermi surfaces proposed by Shoenberg, and the corresponding mass parameters were evaluated. These new carrier oscillation periods agree with two possible models of the Fermi surface for the hole. They are discussed with reference to the number of carriers.

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