Giant Quantum Oscillations in the Magneto-Acoustic Attenuation and the Spin Splitting of Arsenic

ABSTRACTS OF PAPERS

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Giant Quantum Oscillations in the Magneto-Acoustic Attenuation and the Spin Splitting of Arsenic*

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Abstract

Giant quantum oscillations of the magneto-acoustic attenuation in arsenic have been studied for the 140 Mc/sec longitudinal wave and in the magnetic fields up to 93 kG. The observed attenuation peaks are spike shaped with spin splittings. The energy surface parameters and spin splitting parameters for holes on the γ-neck were determined from the attenuation peaks. The splitting above mentioned shows that for the field which is parallel to the trigonal axis, the effective g-factor is found to be 75. The line shape of the giant quantum attenuation peak has been interpreted in terms of the nonparabolic energy band model and it revealed the hole-mass character typical of the saddle point on the γ-neck.

* The **1455th** report of the Research Institute for Iron, Steel and Other Metals. Published in the Journal of the Physical Society of Japan, **26** (1969), 964.