KNIGHT SHIFT AND CRITICAL POINTS IN THE BAND SPECTRUM OF PbTe AND SnTe

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S u m m a r y

We study the Knight shift (ΔH) on nuclei ^{207}Pb in PbTe (of the n- and p-type) and on ^{119}Sn in p-SnTe in a maximally wide region of the concentrations of current carriers. In the samples of p-PbTe in the interval of concentrations $6\times10^{16} \le p < 6.6 \times 10^{19}$ cm^{-3} ($p = p_{77}$), the shift is diamagnetic. For $p \approx 2 \times 10^{19}$ cm^{-3}, ΔH attains the maximum value, and, for $p \approx 6.6\times10^{19}$ cm^{-3}, the sign of ΔH is inverted. In n-PbTe, we observe the paramagnetic Knight shift which weakly depends on the concentration of electrons in the interval $6.2\times10^{16} \le n < 2 \times 10^{19}$ cm^{-3}. For $n \approx 2 \times 10^{19}$ cm^{-3}, a sharp jump of ΔH by $\approx$ 60 Gs happens. In SnTe, the shift $\Delta H > 0$ in the interval $p = 0.6 \times p_{77} = 3.3 \times 10^{19} \div 2.24 \times 10^{21}$ cm^{-3}, and the dependence $\Delta H(p)$ has a nonmonotonous character. In view of the concentration dependences of the Knight shift, we established the existence of critical points in the band spectra of SnTe and PbTe.