SSNN 13P CHANGE THE TOPOLOGY FERMI SURFACE IN DOPED BY THE BISMUTH WIRES AT THE ELASTIC DEFORMATION

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We present a study of the Shubnikov de Haas (SdH) oscillations, transport and thermoelectrical properties of the bismuth wires doped with Te in glass cover in condition strong elastic deformations at 4.2- 300 K. The effect of elastic tension up to 1.5-2 percent along the wire axes (≈ along bisectrix axis) on the Fermy surface of Bi-0.1at%Te wire was investigated [1].

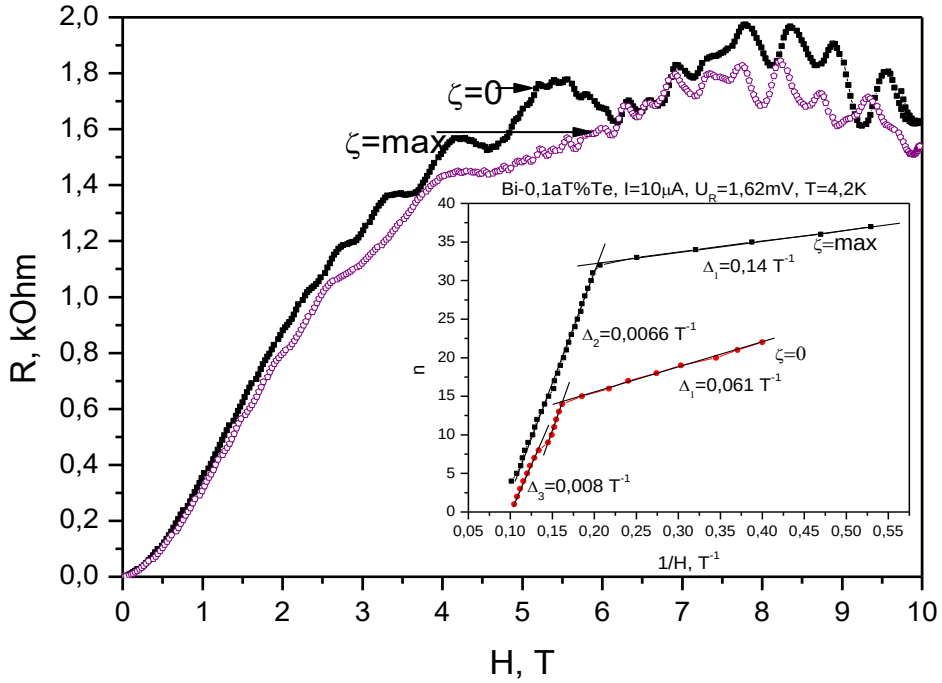

Fig. 1 Field dependences longitudinal magnetoresistance H || I, Bi-0.1at%Te wire at elastic deformation: 1- ξ=0, 2- ξ=max=1,7%.

It is shown, that the thermopower remains negative in all area of temperatures and elastic deformation. It is found that the such elastic deformation caused a change in symmetry of the crystal, violates the equivalence of electron “ellipsoids” and induces redistribution of carriers between the extreme without any change in their total concentration.

The cyclotron effective mass estimated from the temperature dependence of the amplitude SdH oscillations increase in comparison with pure Bi. That confirm with the strongly non-parabolic nature of the electron spectrum at the point L in the reduced Brillouin zone [2].

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[2] Morimoto, J. Takamura, and Y. Sugimoto. *J. Phys. Soc. Japan* **19** 1964 241.