mixing of the interacting states, it follows that the more intense ones should be the pairs in the case of non-equivalent arrangement of the positions of the nearest interacting molecules, as is indeed observed in the experiment.

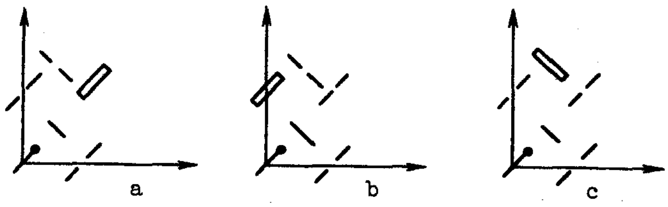

Fig. 2. Possible relative placements of the impurity (——●), impurity-perturbed (–) and unperturbed (---) molecules on which a vibration (rectangle) is localized in the ab plane of a naphthalene crystal.

A similar picture is observed also in the spectra of naphthalene with other impurities (see the table).

As to the bands with frequencies (see the table) 31 879 (thionaphthene), 31 903 (indole), and 31 918 cm^{-1} (benzofuran), these bands correspond to the case when the vibration is localized on the molecule perturbed by the impurity. They were observed by us earlier (the so-called L_k-bands), and their frequencies were used in [8] to calculate the parameter Δ, which determines the change of the excitation energy of the molecule in the crystal when the molecule is perturbed by the impurity.

In conclusion, the authors thank V.I. Sugakov for a discussion of the results.

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HALL AND NERNST-ETTINGSHAUSEN EFFECTS IN SINGLE-CRYSTAL RHENIUM

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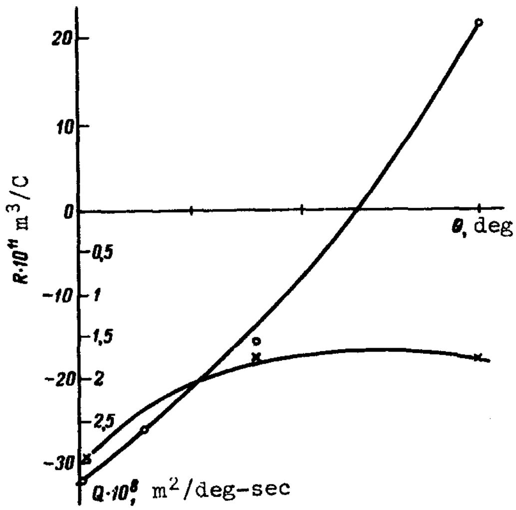
The earlier investigations of the Hall effect [1, 2] and the Nernst-Ettingshausen effect [3] in rhenium were performed on polycrystalline samples. We report here an experimental determination of the Hall and Nernst-Ettingshausen coefficients obtained for rhenium single crystals with a resistance ratio R(273°K)/R(4.2°K) = 50. The investigated samples were cut by the electric-spark method from a single-crystal rhenium rod at various angles (15, 40, 90°) relative to the hexagonal axis. The sample thickness was 0.3 - 0.4 mm and their length fluctuated in the range 10.2 - 10.4 mm. The cut samples were ground with emery paper and polished electrolytically. The c-axis orientation in each sample was established with the aid of the Laue patterns. Platinum potential contacts of 0.2 mm diameter and chromel-alumel thermocouples were welded to the sample with an electron beam. A Hall current of 0.1 - 1 A was made to flow through the sample. When measuring the Nernst-Ettingshausen emf, a temperature gradient 10 - 20 deg/cm was produced with two heaters. The Hall and Nernst-



Ettingshousen emf's were measured by a potentiometer method using an FEOU-18 amplifier, and the voltage sensitivity of the setup was 2×10^{-9} V/mm. The magnetic field intensities was varied up to 16 kG.

The dependence of the Hall and Nernst-Ettingshausen constants R and Q on the angle θ between the magnetic field intensity vector $\vec{H}$ and the c-axis of the crystal is shown in the figure.

The table lists the values of $R_{\parallel}$ and $R_{\perp}$, and also $Q_{\parallel}$ and $Q_{\perp}$, i.e., the values of the Hall and Nernst-Ettingshausen constants for θ = 0° and θ = 90°.

It is seen from the table and from the figure that the Hall effect in rhenium is strongly anisotropic. There is also a reversal of the sign of the Hall coefficient on going from one plane to another.

0	− 32 ± 0.02	− 3 ± 0.05
90	+ 22 ± 0.02	− 1.66 ± 0.05

Such an anisotropy of the Hall effect can be attributed to the anisotropy of the Fermi surface, which is electronic in the (0001) direction and of the hole type in the $(0\bar{1}01)$ direction, as shown in [4 - 6]. This agrees with our measurements, where $R_{\parallel} < 0$, indicating predominance of the electronic part, and $R_{\perp} > 0$, corresponding to the hole part of the Fermi surface.

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LOW-ENERGY SPECTRUM OF ππ MASSES IN THE REACTION $\pi^- p \to \pi^+\pi^- n$ AT 400 MeV

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The investigation of the low-energy ππ-mass spectrum in the reaction

$$\pi^- p \to \pi^+\pi^- n \qquad (1)$$