cm^{-3} and H_0 = 350 Oe, spreading causes the characteristic time of the wave to reach (2 - 3) x 10^{-7} sec. In this case the collisions can affect the damping. In the region $4a < z < 6a$, where the spreading can be neglected, the wave damping length is 8 cm, and the ratio of the maximum magnetic field of the wave to the constant magnetic field is 0.2 in this experiment.

Measurements show that the damping decrement of the circuit increases with increasing q. When q = 0.8 and $n_e = 1.7 \times 10^{13}$ cm^{-3}, 20% of the initial energy of the circuit is transferred to the plasma. In the afterglow mode, the plasma density increased after operation of the circuit. The electron energy lost to additional ionization corresponds, within the limits of accuracy, to the circuit loss. Preliminary measurements, made at a density close to 10^{12} cm^{-3}, point to the presence of soft x-rays emitted from a target located at an intermediate radius of 14 cm from the exciting loop.

We have observed thus in the experiments oblique non-stationary waves with nonlinear propagation and damping. For the limiting values of the parameter q, such waves are similar in structure to the oblique shock waves.

The authors are indebted to E. K. Zavoiskii for continuous interest in the work and to Yu. G. Kalinin for participating in the work.

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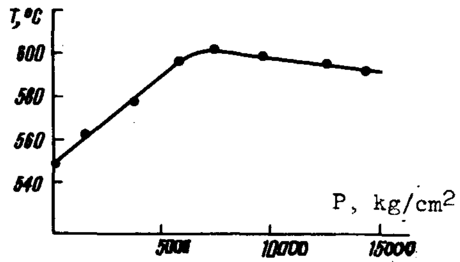
MELTING CURVE OF ANTIMONITE UP TO 1500 kg/cm^2 PRESSURE

V. A. Kirkinskii and A. P. Ryaposov
Institute of Geology and Geophysics, Siberian Division, USSR Academy of Sciences
Submitted 3 August 1965

Interest in investigations of melting under pressure has increased recently, especially in connection with the discovery of extremal points on the melting curves of several metals. Maxima were found to exist on the curves of rubidium [1], cesium [2], barium [3], and tellurium [4]. Enough data are available by now on the laws governing the melting of sulfides and their analogues.

The melting of antimonite (stibnite) - one of the most abundant antimony minerals (Sb_2S_3) - was investigated in a super-high-pressure multiplicator with double mechanical support. The apparatus was based on the multiplicator design described in [5]. The pressure-transmitting medium was a siloxane liquid. The pressure was measured with a manganin resistance manometer accurate to ±100 kg/cm^2. A heater with a titanium container for the investigated substance and for the standard was placed inside a channel 25 mm in diameter. The melting temperature at hydrostatic pressures up to 15,000 kg/cm^2 was determined by differential thermal analysis. The emf from a set of ordinary and differential chromel-alumel thermocouples was registered with automatic recorders. The temperature measurement accuracy was ±3°C.



The measurement results are shown in the Figure. It is seen that the melting point rises almost linearly with the pressure (dT/dP = 8 deg/katm) up to 6000 kg/cm^2. Assuming that the melting heat of Sb_2S_3 is 125 J/g [6], we find from the Clausius-Clapeyron formula that the volume effect in the melting of antimonite amounts to 5.5%.

An interesting fact is the observed maximum on the melting point, at 7000 - 7500 kg/cm^2. The maximum melting temperature for Sb_2S_3 is 602°. With further increase in the pressure, a very slow decrease in the melting point to 593° is observed at 14,300 kg/cm^2.

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EVEN ACOUSTO-ELECTRIC EFFECT IN ZINC SULFIDE CRYSTALS

A. I. Morozov

Institute of Radio Engineering and Electronics, USSR Academy of Sciences

Submitted 4 August 1965

The passage of a sound wave through a conductor increases the number of carriers in the wave propagation direction and results therefore in a dc voltage (acousto-electric effect[1,2]). In piezoelectric crystals, the acousto-electric emf can reach appreciable values, on the order of several volts or more [3]. It was indicated in [4,5] that the acousto-electric effect in crystals without inversion centers can theoretically be either odd, i.e., reversing sign when the wave direction is reversed, or even. As far as we know, however, the even effect was not observed experimentally.

In this communication we report the existence of an even acousto-electric effect in zinc-sulfide crystals, observed for propagation of a longitudinal sound wave in the direction of the hexagonal axis C.