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The Velocity of Ultra Waves in Ether Vapor

George E. Thompson
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THE VELOCITY OF ULTRASONIC WAVES IN ETHER VAPOR

George E. Thompson

The velocity of high frequency sound waves has been determined in ether vapor at several pressures. The velocity is slightly less at the higher pressures.

Iowa State College,
    Ames, Iowa.

EFFECT OF PIEZO ELECTRIC OSCILLATIONS ON X-RAY PATTERNS OF QUARTZ

P. H. Carr and G. W. Fox

Experiments have been made to determine the amplitude of vibration of the atoms in a quartz lattice due to piezo electric oscillations. A series of Laue X-ray patterns have been made of quartz plates cut at various angles to the electric axes. Very marked intensity differences are apparent between the patterns made with the plates oscillating and not oscillating.

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    Ames, Iowa.

EVIDENCE OF ENERGY EXCHANGES ACCOMPANYING SCATTERING OF ATOMS BY CRYSTALS

H. A. Zahl and A. Ellett

The distribution of mercury atoms scattered from NaCl KCl, KBr KI has been studied by means of an ionization gauge as a function of angle of incidence and temperatures of scatterer and incident beam. The direction of maximum intensity makes an angle with the crystal normal not equal to the angle of incidence but always slightly less. The distribution can be well represented by

$A \cos \Theta + B \cos m (\alpha - \Theta)$ $(B = 0$ when $|m (\alpha - \Theta)| > \frac{\pi}{4}$

The departure from specular reflection γ = (angle of incidence $- \alpha$) is greatest for high incidence, being 16° to 4° at an angle of incidence of 70° and about 5° at 45°. The values of A/B, m and γ depend on temperatures of crystal and beam. For rock salt at least, γ is less (more nearly specular) the colder the crystal and hotter the beam.