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Polarization of Resonance Radiation and Breadth of Spectral Lines

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THERMOELECTRIC EFFECT IN SINGLE CRYSTAL
BISMUTH

R. W. BOYDSTON

Wires of single crystals of bismuth have been prepared by the Czrokalski method. The crystals so far investigated have been of orientations between 10° and 40° . The variations of the thermoelectric properties with orientation is rather slight in bismuth compared with similar effects in zinc as found by Linder, Grüneisen and Goens, and Bridgman.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

POLARIZATION OF RESONANCE RADIATION AND
BREADTH OF SPECTRAL LINES

A. ELLETT

Observations of the polarization of the D line resonance radiation of sodium indicate that the transition probabilities for the various components of the Zeeman pattern are substantially in agreement with the predictions of the so-called sum rule. Observations in relatively strong fields show the effect of non-uniform distribution of intensity in the exciting spectral line. The assumption that the distribution of energy in the exciting line is due practically entirely to Doppler effect leads to equations for the variation of polarization with field strength which are well verified experimentally. Any broadening of the line by collision or by a coupling effect is evidently quite small in comparison with the Doppler breadth.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

POLARIZATION OF λ 2537 OF MERCURY

HARRY F. OLSON

$1\text{ S} - 2\text{ p}_2$ of mercury excited by plane polarized light shows 79% polarization both in the absence of any magnetic field and in the presence of a field parallel to the electric vector. That the polarization is not complete might be interpreted as due to collisions but more probably is due to the fact that in weak fields some of the fine components of λ 2537 have not the same Zeeman