Is Iowa Getting Wetter or Drier?

Charles D. Reed
ferromagnetic metals, iron and cobalt. As in the case of iron, the magnetic field necessary to produce saturation is lower for evaporated films of cobalt and nickel than for the bulk metals.

UNIVERSITY OF IOWA.

IS IOWA GETTING WETTER OR DRIER?

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A brief analysis of long period rainfall records in various portions of the state.

THE INTRINSIC INTENSITY AND PERCENT OF POLARIZATION OF LIGHT TRANSMITTED THROUGH DEEP SLITS

L. P. SIEG

(ABSTRACT)

It is assumed that the light incident upon the first opening of a slit between various metals is diffracted in the usual manner, and finally emerges from the far end of the slit after repeated reflections. The reflecting coefficients of the various metals considered are calculated for the proper angles of incidence from a knowledge of the index of refraction of the metal, and from its coefficient of absorption. In view of the fact that the coefficients of reflections for light possessing an electric vector perpendicular are much larger than for light with the electric vector parallel to the plane of incidence, there will be partial polarization of the emergent light.

The two factors, transmission, and polarization, have been calculated for the metals Cu, Au, Ag, Ni, Fe, and Si, for a given slit; and for a slit with steel jaws, a large number of calculations have been made for various cases in which the width and depth of the slit, and the wave-length of the incident light have been varied. A brief review of these calculations shows the following significant facts.

1. The per cent of polarization of the emergent light is largest for those metals that possess the greatest differences in the reflection coefficients for the electric vector perpendicular, and parallel, respectively, to the plane of incidence. Among the metals tested, silicon shows, with a given slit the greatest polarization.

2. With a given width and depth of a slit between steel jaws