reaches a maximum of 0.3 %. The points for the present data shown in the figure represent two different runs; it is, consequently, difficult to ascribe these differences to temperature gradients between the sample and the thermocouple. There is, therefore, no apparent explanation; nevertheless, the differences diminish to approximately 0.15 % in the range of 500° to 573° K and a line through the present data gives a slope corresponding to that of previous data above 500° K. It may then be assumed that no serious errors exist in the present data above 573° K.

3.2. INTERNAL CONSISTENCY OF DATA

As indicated in table 2, the data obtained provide several means of computing c_{22}, c_{55} and c_{66}. The curves obtained using the different equations of table 2 are compared in fig. 2, where the values of the three moduli, normalized to the 298° K values, are plotted over the range from 298° to 923° K. For c_{55}, the values computed directly from the crystal A data are in exceptionally good agreement with those computed

from eq. c_{55} (4) between 298° and 600° K. The latter equation gives c_{55} up to 750° K and the c_{55} (1) data are again available above 825° K. The curve drawn through these two sets of c_{55} values and the c_{55} values below 298° K, given in [2]), has two linear parts, one extending from 250° to about 425° K and the other between 450° to 923° K with a relatively sharp curvature between 425° and 450° K. The c_{55} values from crystal C and eq. c_{55} (3), however, deviate positively from this curve by a maximum of 0.8 % at 450° K and give slightly lower values in the 800° to 900° K range. Although the deviations are relatively minor, a curve constructed using the latter two sets of data would not blend into the low temperature data using a linear plot and would indicate a positive curvature in the 700° to 800° K range.

For c_{66}, the few data points obtained from crystal B and the values from eq. c_{66} (3) blend in smoothly with the low temperature measurements and are in remarkably good agreement with the eq. c_{66} (2) points up to 740° K. Furthermore, by assuming a smooth curve for the
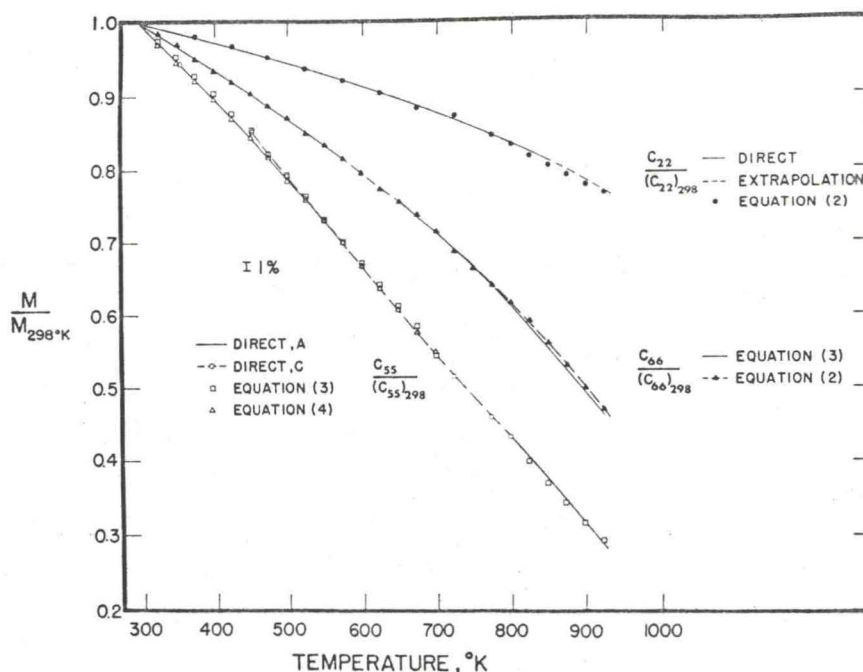

Fig. 2.   Comparison of the normalized modulus values for c_{22}, c_{66} and c_{55} as evaluated from different sets of data using equations given in table 2.