

V - CONCLUSIONS

With a "X type anvil", inconsistencies in the high pressure scales which are currently used have been revealed. A new pressure scale which fits better this apparatus has been established, which would locate the transition pressures of Bi 3 - 5 at 78 ± 2 kbar and of Sn at 102 ± 4 kbar, and of Fe at 140 ± 15 kbar. However many authors have discussed the influence of the apparatus shape, of sample shape, (wire or ribbon) of the pressure transmitting medium, of the pressure gradients on the nucleation of the allotropic transformations under high pressure. Thus the above conclusions may be valid only for the apparatus which was used. Rather than calibrating it would be better to evaluate the pressure at all time by the continuous change in the property of a material such as the lattice parameter with X - ray diffraction. Provided the equation of state of the material is theoretically known, an apparatus such as a hexahedral press built in our laboratory (31) should bring in the future interesting results.

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