

The temperature of the inner wall of the tube is obtained by adjusting the measured result by the temperature difference calculated for the tube thickness.

We checked that heat flux through the insulator was negligible.

III - MEASUREMENTS RESULTS -

For each helium bath pressure and temperature pair, the temperature of the inner wall tube has been plotted versus the total dissipated power.

Each diagram contains three curves which correspond to the three measurements points.

When temperature oscillations occur, the two extreme values have been plotted.

III - 1. Saturated helium

- Figure 2 corresponds to a bath of normal helium at 4.2 K and 1 atmosphere. Critical flux is 500 mW, that means 0.12 W per square centimeter of heating surface, in agreement with results found by Lehongre et Al. (1) under similar conditions.
- Figure 3 was obtained with a saturated superfluid helium bath at 1.9 K and 17.6 mm Hg, the sample immersed under 20 cm.

III - 2. Unsaturated superfluid helium. Effect of pressure :

Figures 4, 5, 6, 7 and 8 were obtained at 1.85 K and under pressures varying from a few mm. Hg up to 3.5 ata.