



FIG. 1. The volume change on melting of He<sup>3</sup> and He<sup>4</sup> as a function of pressure.

fluid is zero. In Figs. 6 and 7 are plotted the values of  $(\partial\alpha_f/\partial T)_P$  and  $(\partial\beta_f/\partial P)_T$ , respectively, for He<sup>3</sup> along the melting curve. Also shown in Fig. 6 are  $(\partial\alpha_f/\partial T)_P$  values for the  $\alpha_f = 0$  points of Fig. 5. For He<sup>4</sup> at temperatures below the lambda temperature, a plot of  $\alpha_f$  versus  $T$  at  $P = 25.47$  kg cm<sup>-2</sup> is shown in Fig. 8. Figure 9 is the condensed phase diagram for He<sup>3</sup>, showing the solid  $\alpha \rightarrow$  solid  $\beta$  transition line (extrapolated to  $T = 0$ ) and the  $\alpha_f = 0$  locus in the liquid domain. Deviations of the individual experimental points from the curves of Fig. 9 are not visible on the scale.

The experimental and derived melting properties of He<sup>4</sup> are presented at various melting points in Table I. Values of  $\Delta S_m$  were computed from  $\Delta V_m$  and