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Thermal Expansivity and Isothermal Compressibilityof Solid Kr between 4 and 115 °K

By

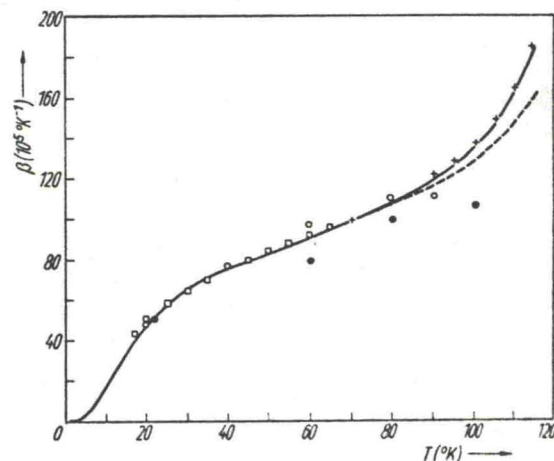
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Recent calculations of the thermal expansivity and the isothermal compressibility (1) show that measurements with an accuracy of better than 5% are necessary to test the theoretical predictions. We have interferometrically measured the change of the specimen length as a function of temperature or pressure (2). By this method the thermal expansivity and the isothermal compressibility could be determined with an accuracy of better than 1% in the whole temperature region from 4 to 115 °K.

Crystals were grown in an apparatus constructed by Peter (3) which was similar to that described by Gsänger et al. (4). The krypton gas used had a purity of 99.9995%.²⁾ The specimens had lengths of about 50 mm and diameters of about 10 mm. The three investigated crystals were transparent. Neutron scattering data

Fig. 1. Volume expansion coefficient β of solid krypton.

- L. H. Bolz and E. R. Maurer (not published), see Pollack (11);
- Figgins and Smith (12);
- Manzhelii et al. (6);
- + Gavrilko et al. (7, 8);
- Losee et al. (9);
- this work



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