Theory of the Snoek Effect in Ternary B.C.C. Alloys : II. Simplified Treatment

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II. Simplified Treatment*

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Abstract

A theoretical basis is developed for the analysis of the spectrum of the Snoek effect in ternary b.c.c. alloys. The extensive treatment of Part I is simplified by assuming that the interstitial atoms in the third-nearest-neighbour position move independently of the substitutional atom. Numerical values obtained with this assumption are fairly close to those obtained by elaborate calculations of Part I.

The damping spectrum may be decomposed either into components associated with the degree of rotation of interstitial atoms in each shell around substitutional atoms, or into Debye peaks. The latter decomposition may show an anomaly when the relaxation times have a certain relationship.

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