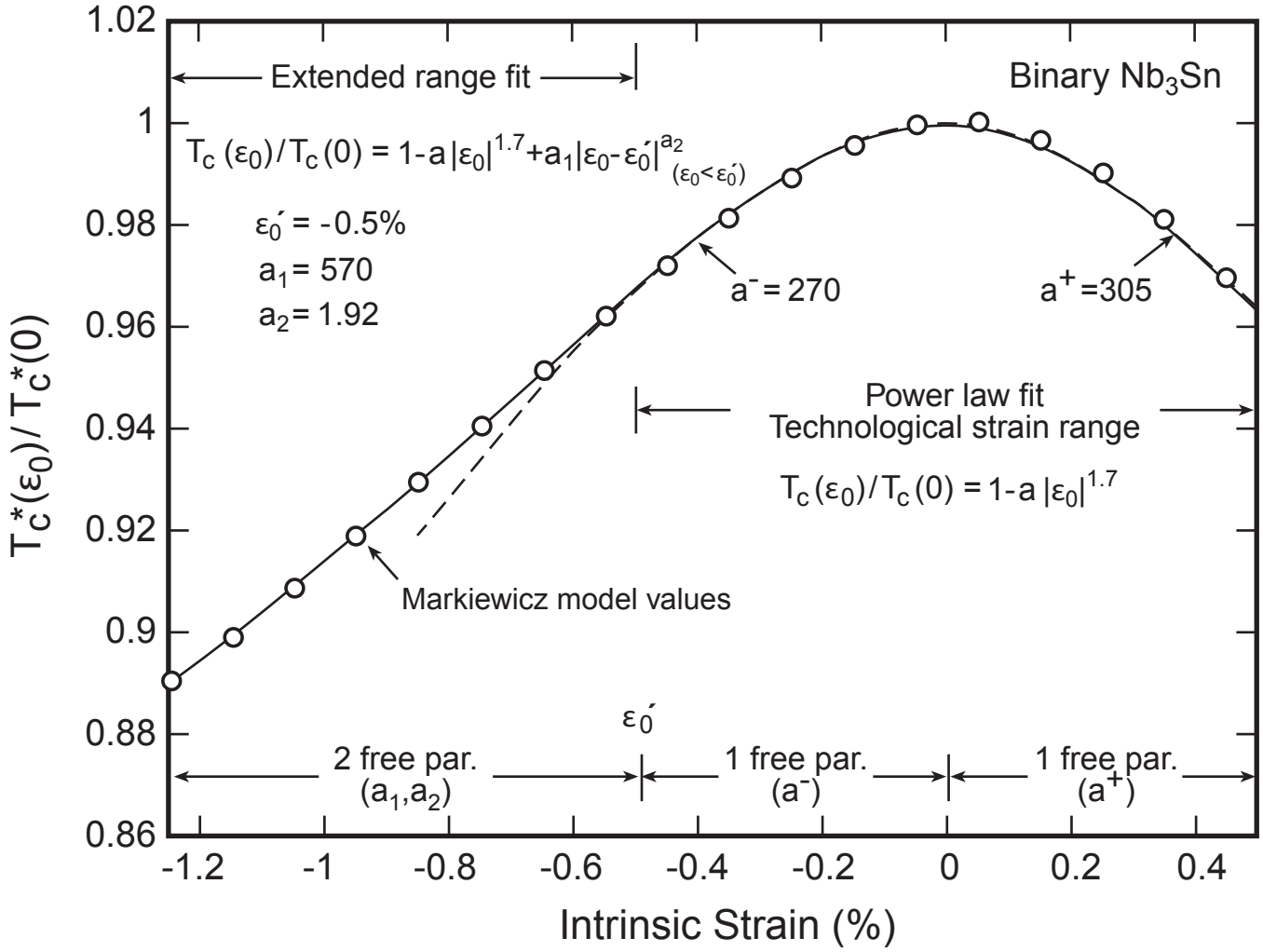

FIG. 10.33 Critical temperature of binary Nb_3Sn calculated over an extended strain range from a three-dimensional deviatoric strain model by Markiewicz (2004, 2005). The solid curve shows an extended-range fit of the model results with an expression of the same form as Eq. (10.23) for the effective upper critical field. Fitting forms of this type are useful for analytically representing the strain dependence at high compression while preserving a consistent value of the parameter *a* for characterizing the intrinsic peak region (-0.5 % < ε_0 < 0.4 %) where most magnets are designed. In the Markiewicz model, the transition to a positive second derivative at high compressive strains mainly arises from the third invariant of the deviatoric strain tensor. Extrinsic factors, such as copper and bronze yielding or conductor damage at very high compressive strains, may also contribute to a positive curvature.