



FIG. 10.31 Data correlations showing the nearly universal effect of axial strain on the effective upper critical field $B_c(\epsilon_0)$ of different types of bronze-process A-15 multifilamentary superconductors at 4.2 K (from Ekin 1984). The correlation curve for binary Nb_3Sn from Fig. 10.30a is redrawn here without the data shown in Fig. 10.30a so as not to mask the ternary Nb_3Sn data. The correlation for binary Nb_3Sn also well represents ternary Nb_3Sn conductors with small amounts of additives, such as titanium (~0.6 at%), hafnium, or gallium. On the other hand, the strain dependence of Nb_3Sn with larger amounts of additives, such as tantalum (0.2 at%) or hydrogen, leads to an *increased* strain sensitivity of $B_c(\epsilon_0)$ as shown by the steeper curve labeled Nb_3Sn (Ta,H). (Further data for the strain sensitivity of different ternary Nb_3Sn conductors are tabulated in Appendix A10.2a.) Note that only compressive data are shown for Nb_3Ge and V_3Si .