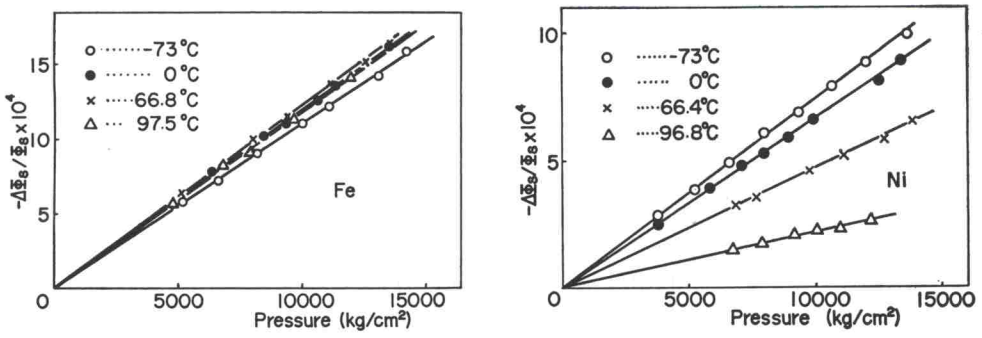

Fig. 4. A plot of $\Delta\Phi_s/\Phi_s$ for Fe and Ni as a function of pressure at four temperatures reproduced from reference (14).
The difference between $\Delta\Phi_s'/\Phi_s'$ in the present paper and $\Delta\Phi_s/\Phi_s$ in this figure is noted in the text.

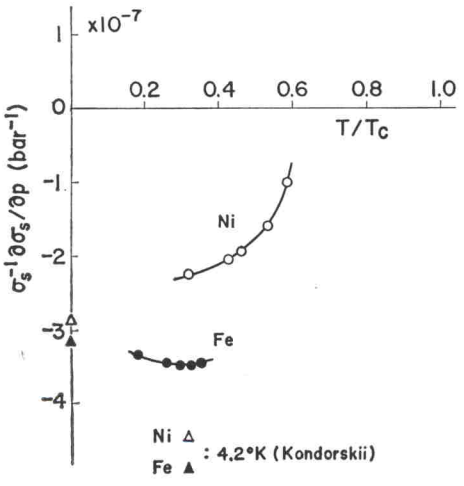

Fig. 5. A plot of $\sigma_s^{-1}(\partial\sigma_s/\partial p)$ as a function of reduced temperature $Te T_c$ for Fe and Ni reproduced from reference (2).

In the results for Cu-Ni[15] and Pd-Ni[16] alloys, the correction described in section 2 has already been made.

From the value of $\partial\sigma_s/\partial p$ thus obtained over a wide temperature range, that of $\partial\sigma_{so}/\partial p$ has been estimated from thermodynamical consideration,[2] and the detailed procedures and discussion have been reported.[3] The pressure effect on σ_{so} would essentially provide a knowledge of the exchange interaction responsible for ferromagnet ism together with the pressure effect on T_c. Moreover, the pressure effect on σ_s at a temperature provides a direct contribution to the analysis of some magnetic properties of ferromagnetic metals and alloys. In the present paper, two examples will briefly be discussed. (i) Forced volume magnetostriction: The pressure effect on σ_s is combined with the forced volume magnetostriction $\partial\omega/\partial H$ in the following relation

$$\partial\omega/\partial H = -D\partial\sigma_s/\partial p. \tag{10}$$

Apart from the detailed analysis and discussion on the forced volume magnetostriction, the relation (10) has been used as a quantitative check of the pressure effect on σ_s, and vice versa. Precise measurements of the forced

volume magnetostriction over a wide temperature range have recently been made by Tange et al.[20] for Ni, and their results are in fair agreement with those obtained from the pressure effect on σ_s obtained from Eq. (7) by the present authors. (ii) Linear compressibility: The linear compressibility, which appeared in Eq. (3) or Eq. (7), is one of the valuable quantities which reflects the exchange interaction, as clearly pointed out by Ishida.[21] The value of $\partial\sigma_s/\partial p$ is necessitated for the theoretical estimation of the linear compressibility based on a molecular field theory made by Ishida. The agreement between the calculated and observed values of the linear compressibility was fairly good for Cu-Ni[21] and Ni-Pd alloys.[22]

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