The Effect of Atomic Ordering on
the Magnetic Properties of Fe-Al Alloys*

Takeshi SHINOHARA**

Japan Atomic Energy Research Institute, Tokai-mura

Abstract

The effect of atomic ordering on the magnetic properties of Fe-Al alloys has been studied for the specimens with different compositions. The so-called "double-Curie point" phenomenon has been studied at a magnetic field strength of 242 Oe: the behavior of the magnetization in this temperature range is different from that observed at lower magnetic filed strengths, and Pál and Tarnóczí's interpretation, which is based on the demagnetizing filed caused by the formation of a finely dispersed paramagnetic Fe₅Al ordered phase, cannot apply to this case. There is some evidence that the Curie temperature of FeAl ordered phase is higher than that of Fe₅Al ordered phase, and at high Al concentrations both of these temperatures are lower than the Fe₅Al-FeAl transformation temperature. The difference in the paramagnetic behavior between the FeAl ordered phase and disordered phase has been observed and discussed.

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** Visiting researcher from the Research Institute for Iron, Steel and Other Metals, Tohoku University. Now returned.