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# PHYSICS

W. F. BROWN, Jr.

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## Abstract

## Full Text

PHYSICS

**W. F. BROWN, Jr.**

# ON THE THEORY OF MAGNETOSTRICTION OF NICKEL SINGLE CRYSTALS

*(Presented by Academician L. A. Artsimovich, December 14, 1956)*

Recently Akulov ([1]) compared his ([2]) theory of the change in longitudinal elongation in nickel crystals upon magnetization with Heisenberg' s theory ([3]). For the case of magnetization along [111], he found that the curves he obtained agree better with experiment than the curves calculated by Gans and Harlem ([4]) on the basis of Heisenberg' s theory. He evidently sets this result in opposition to Heisenberg' s theory.

I call attention to a paper ([5]) in which it was shown that this discrepancy is a consequence of an error in the calculations of Gans and Harlem. Curves correctly calculated according to Heisenberg' s theory ([5,6]) agree satisfactorily with the experimental data.

No single theory describes the magnetization process exactly, but Heisenberg' s theory has the advantage that it is readily applicable to various problems. Thus, this theory and its subsequent modifications were recently used ([7]) to interpret the reversible behavior of ferrites. Moreover, Akulov himself once ([8]) used it.

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December 12, 1956

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*Note: Figure translations are in progress. See original paper for figures.*

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