Erskine and Suen Reply: While the Comment on our paper [1] by Zhong, Dong, and Xing [2] and reference to their prior related work [3] are clearly relevant to its contents and conclusions, we maintain that our experiments are not compatible with the theoretical and experimental results compiled in our Table I of Ref. [1]. We also disagree with the assertion that "better agreement" could be achieved if our data were "more properly treated."

Zhong *et al.*'s comment generalizes a prior treatment [3] of the two dimensional Ising model to include disorder. The primary result of both models and similar models cited in our paper [4,5] that pertains to our reported experimental results is that the hysteresis loop scaling is governed by

$$A \sim A_0 + a\left(\frac{dH}{dt}\right)^{\alpha}, \qquad (1)$$

with a (temperature dependent) constant A_0 and power law exponent $\alpha = 0.36 \pm 0.08$. The analysis of our experimental data was based on the assumption that the scaling is governed by

$$A \sim H_0^{\alpha}\Omega^{\beta}. \qquad (2)$$

Equation (1) implies $\alpha = \beta$ in Eq. (2), and, that at very low frequencies, ($\frac{dH}{dt} \to 0$), an "adiabatic" region [4] exists in which the hysteresis loss remains constant and characterized by the A_0 term. Our experimental data are not compatible with $\alpha = \beta$. However, if we assume scaling of the form Eq. (1) with $A_0 \neq 0$, and fit our data allowing A_0, a, and α to be unrestricted parameters, we find values of α for Eq. (1) that are essentially compatible with the corresponding parameter β in our paper ($\beta \sim 0.1$) and not $\beta \sim 0.35$. A typical fit for the 3 ML thick stepped surface data at $T = 295$ and 98 K (Fig. 3 of Ref. [1]) along with the parameters are displayed in our accompanying Fig. 1. Clearly A_0 is finite and decreases with increasing temperature, as the Ising model calculations predict. However, the value of α in Eq. (1) remains small and consistent with the value of β obtained using the scaling of Eq. (2). We again conclude that $\alpha \neq \beta$ and that our new results for $p(1 \times 1)$ Fe on W(110) are not compatible with results compiled in Table I of Ref. [1]. New experimental results for Co on Cu(100) and additional discussions of hysteresis scaling in ferromagnetic thin films will be presented in a forthcoming publication [6].

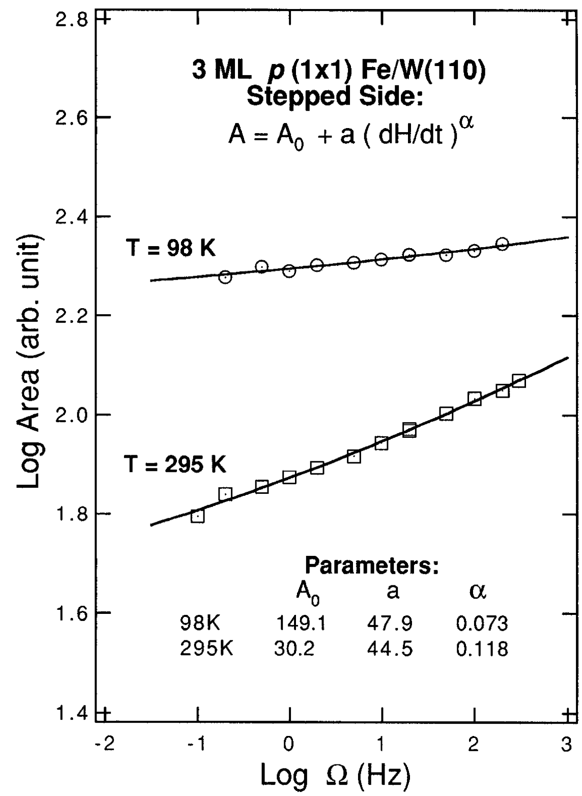

FIG. 1. Fit of experimental data of Ref. [1] to alternate scaling law [Eq. (1)]. The power law scaling exponents α are larger than corresponding exponents β obtained from the scaling law [Eq. (2)], i.e., $\beta = 0.076 \pm 0.002$ for $T = 295$ K, but are still not near the calculated value $\alpha = 0.36 \pm 0.08$.

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J.L. Erskine and J.S. Suen
Department of Physics
University of Texas
Austin, Texas 78712

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