

IDENTIFICATION OF MAGNETIC AFTEREFFECT MODEL PARAMETERS: TEMPERATURE DEPENDENCE

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Recently, several aftereffect models were proposed in which Preisach type hysteresis transducers are driven by stochastic inputs. Such inputs represent random thermal perturbations which are the source of the aftereffect phenomenon. According to these models, aftereffect is completely characterized by the magnetization history, the Preisach function and noise parameters. In this article, we present an identification of model parameters in which temperature-dependence is incorporated into the aftereffect model. The temperature variation of the noise parameters are investigated in order to predict the aftereffect decay coefficient. Comparison of numerical results with experimental ones observed in metal particle tape (MPT) magnetic recording media show a good agreement. As a result, based on the magnetization history, the Preisach function and noise parameters, it is shown that the model can be used to predict aftereffect characteristics of magnetic recording media of arbitrary magnetization history and temperature.