

Influence of Temperature on Domain Wall Dynamics in Rapidly-Changing Magnetic Field

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Abstract. We presented study of the dynamic of a domain wall (DW) moving in bistable microwire in a region of rapidly-changing magnetic field under the influence of lower temperature. Measurements were carried out on bistable glass-coated Fe-based microwire with unidirectional effect in domain wall propagation [1]. The peaks were observed as the DW passed through the region of increase of the rapid changed magnetic field.

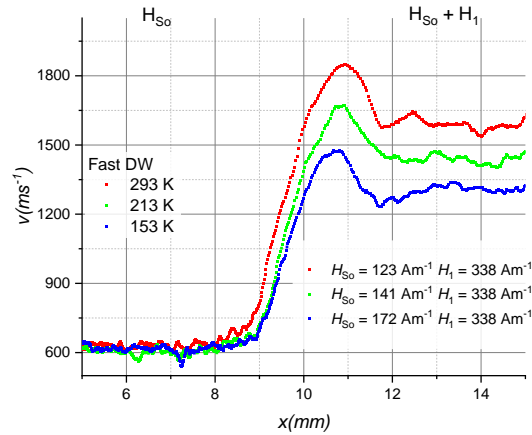


FIGURE 1. Fast DW velocity vs DW position for change in DW velocity at three different temperatures.

The propagating DW is forced to change its parameters in a very short time, resulting in an increase in velocity above its equilibrium value after the DW passes through the region of rapid magnetic field increase (significant peak) [2]. Analysis of the obtained results indicates, that the model of a solid domain wall does not explain the observed peaks on $v(x)$ dependences.

REFERENCES

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