

HF-MFM on perpendicular write heads

R.Pfeifer¹, M.R. Koblischka¹, B.F.Valcu² and U. Hartmann¹

¹Experimental Physics, Saarland University, P.O.Box 151150, D-66041 Saarbrücken

² Seagate Technology, Fremont, CA

The HF-MFM (High Frequency Magnetic Force Microscopy) technique has been employed for the measurement of stray fields emanating from traditional longitudinal write heads [1],[2]. Here we show that it is also possible to apply the HF-MFM technique to perpendicular write heads [3]. The situation is different in so far, that there is no closed magnetic flux between two poles. In contrast there is only one pole and the flux closure is obtained in combination with the writing medium. An ac current of 50 mA with a carrier frequency of 2 GHz, fed in into the write head, causes an observable contrast in the HF-MFM image. Not only the write pole itself but also the magnetic shieldings around the pole are strongly influenced by the HF-current.

References:

- [1] Li S, Stokes S, Liu Y, Foss-Schrader S, Zhu W und Palmer D , *J. Appl. Phys.* **91** 7346 2002
- [2] Koblischka M R, et.al., *IEEE Trans. Magn.*, **43** 2205 (2007)
- [3] Valcu B F, Allimi B, Dobnin A, Lynch R, Brockie R, *Intermag* 2008

Dresden 2009

Seriennummer:

MA 189

Schlüssel für Änderungen

8d43455004e8ca9a6f4876c7b16a61e8