

# Micromagnetic simulations

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Physics of New Materials

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Advanced Training in Hybrid Technologies for  
Nanostructured Composites:

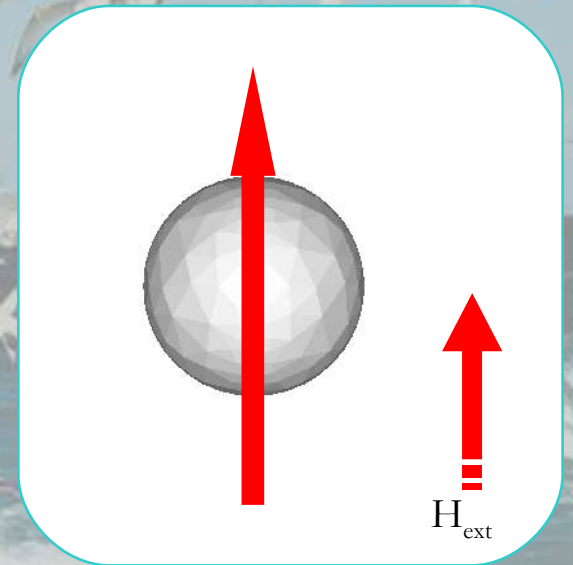
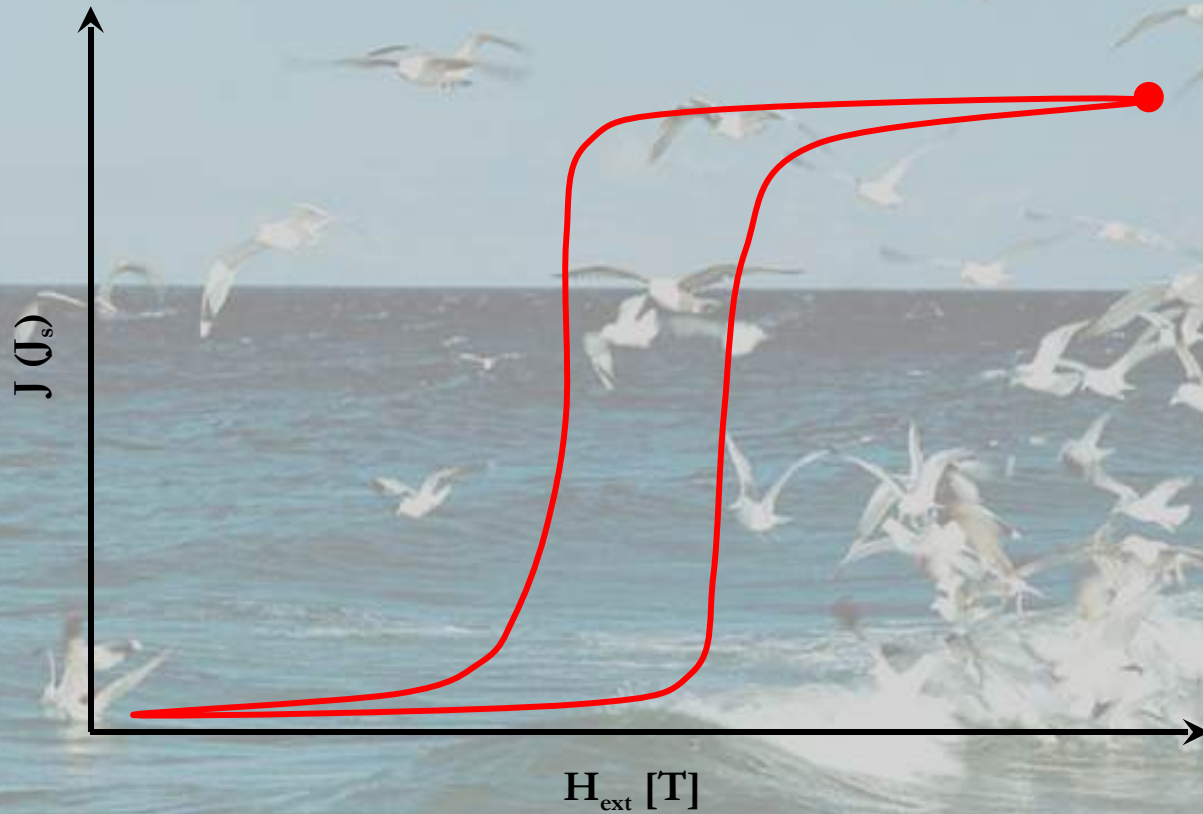
**ADVATEC**

EU Marie Curie EST, 2005-2009, Contract No. MEST-CT-2005-020986

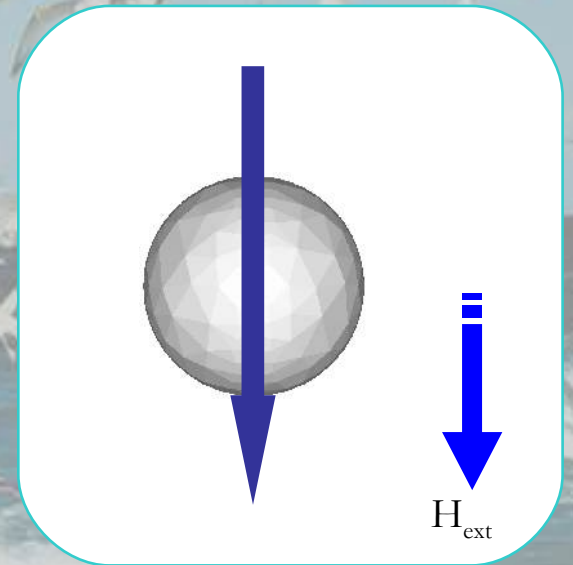
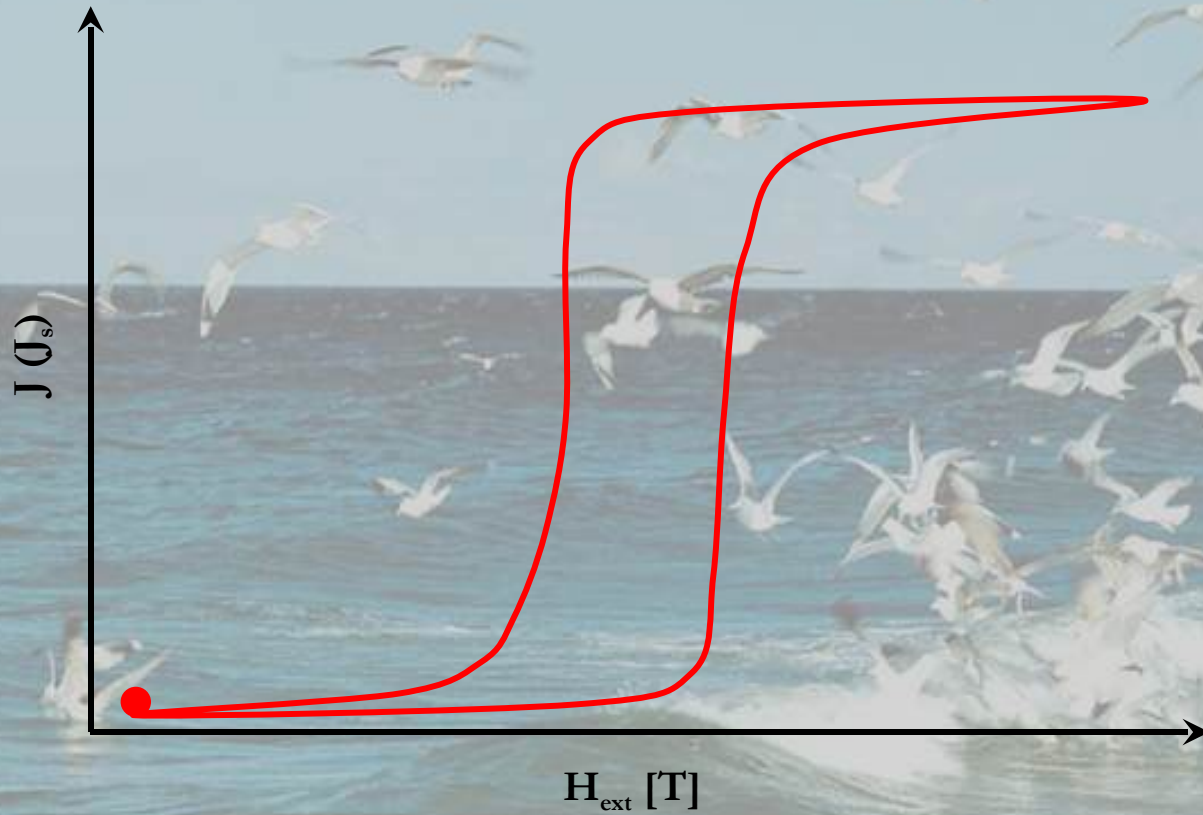
Project Coordinator: Prof. E. Burkel

[www.physik1.uni-rostock.de/user/agburkel/](http://www.physik1.uni-rostock.de/user/agburkel/)

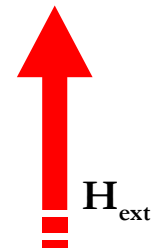
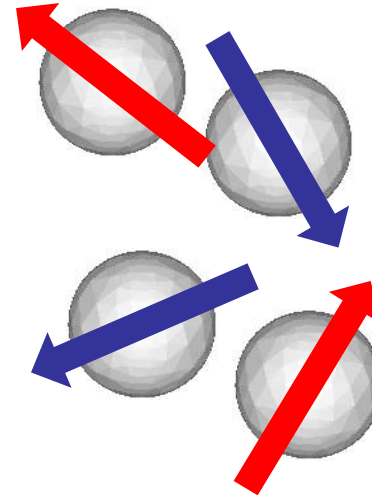
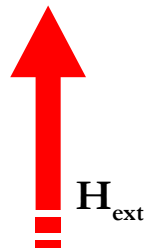
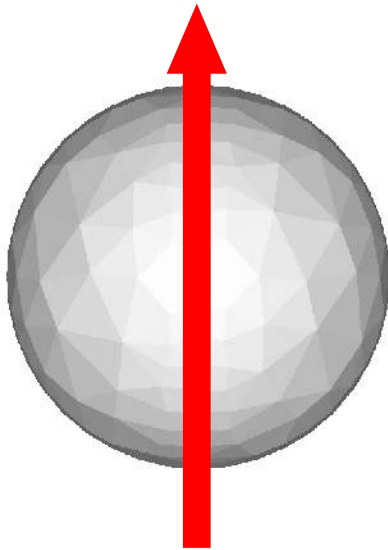
# Hysteresis loop



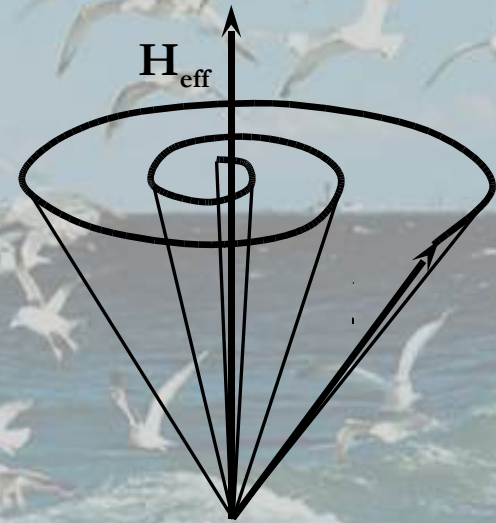
# Hysteresis loop



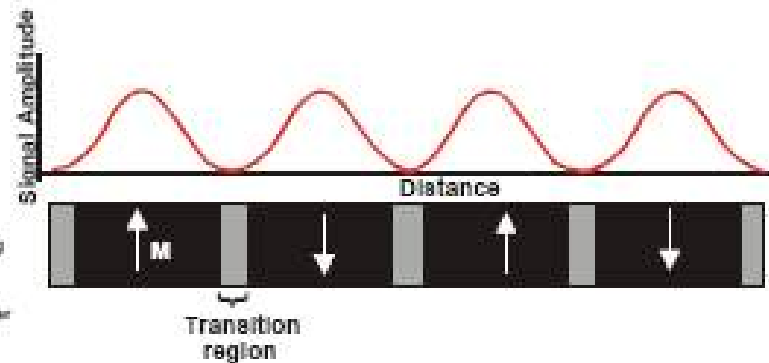
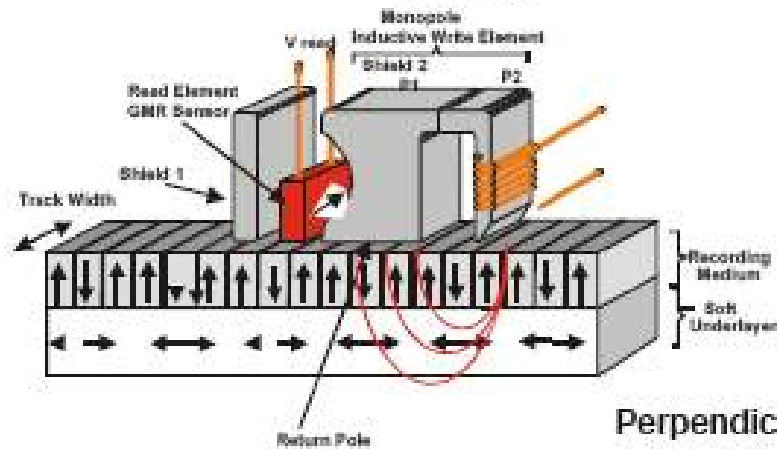
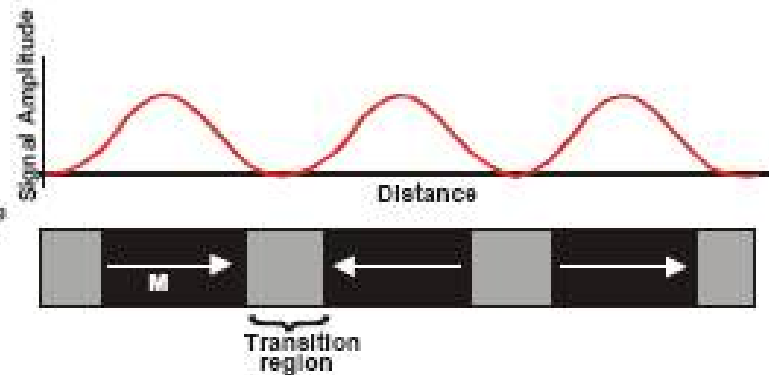
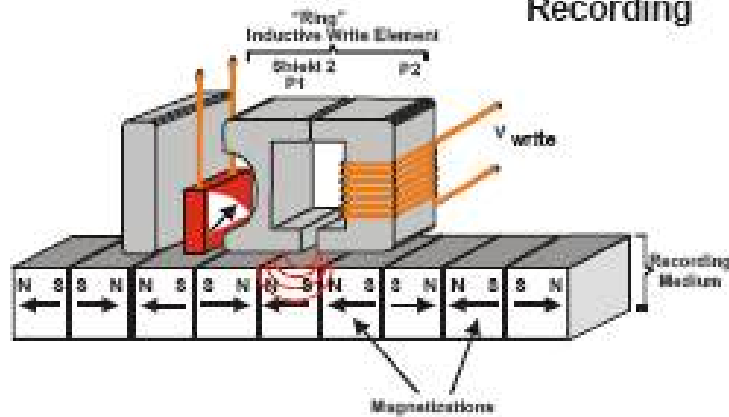
# Superparamagnetic effect



# Micromagnetic simulation



## Longitudinal Recording

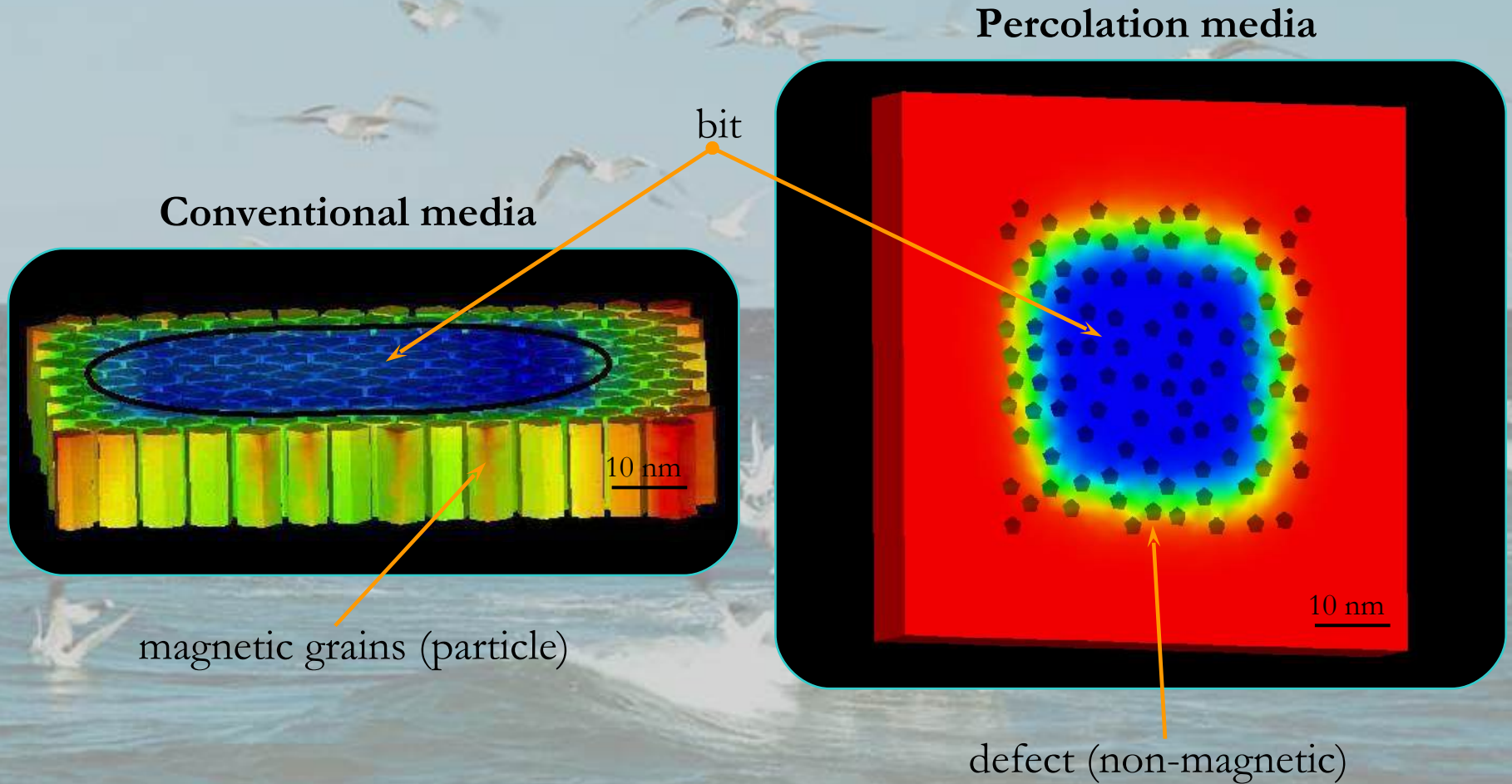


## Perpendicular Recording

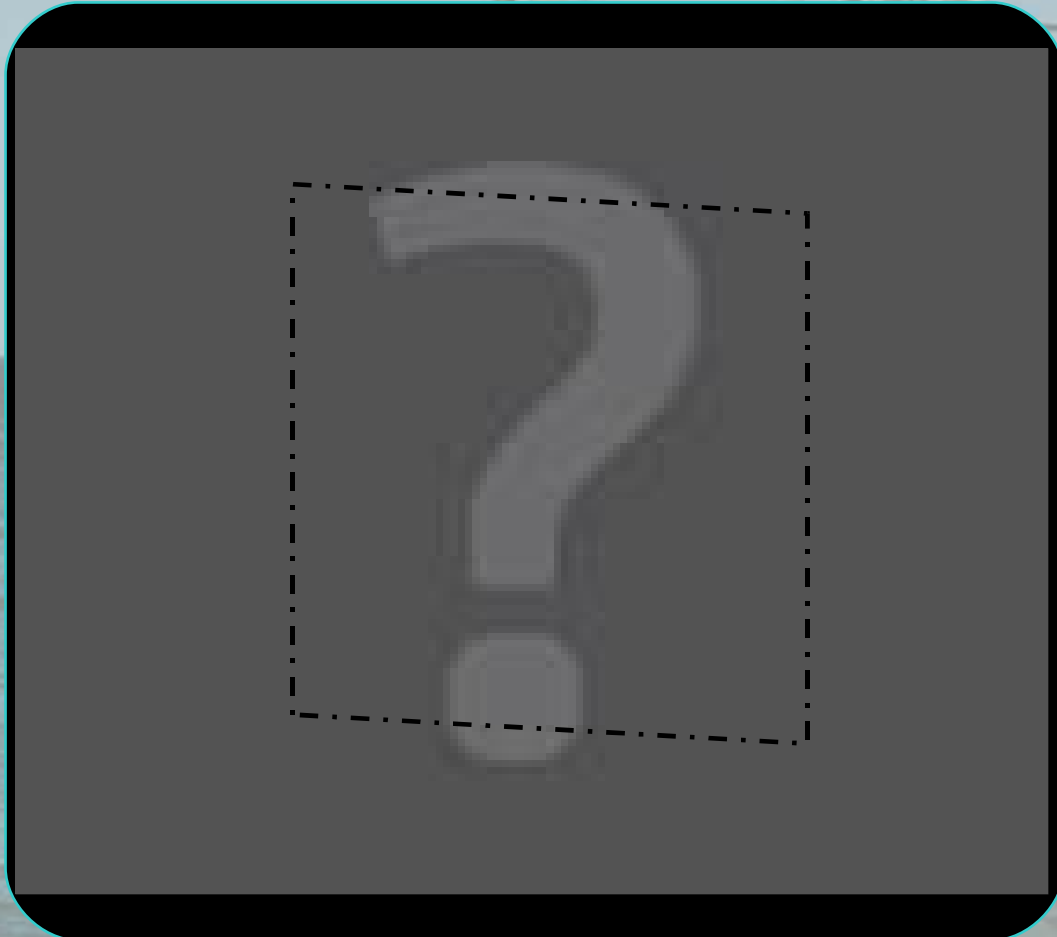
### Recording Technologies

Ed Grochowski

# Coupled magnetic nanoparticles

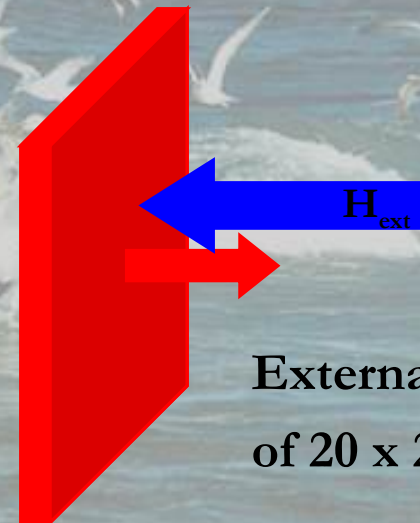


# Thin film containing prismatic defects



- film thickness : 8 nm
- defect diameter : 2 nm
- 100 defects

**1 Tb/inch<sup>2</sup> !!!**



External field in box  
of 20 x 20 nm<sup>2</sup>

# Thank you

