Dipolar coupling – Large separation.
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Dipolar interactions in arrays of ferromagnetic nanowires: A micromagnetic study

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FIG. 2. (Color online) (a) Magnetization curves calculated with $B\parallel O_x$ for different interwire distances in a row formed by $N=7$ nanowires. The solid black line corresponds to the hysteresis cycle of an isolated nanowire. (b) Evolution of the coercive field of the central nanowire as a function of the number of nanowires. Calculated values for three different interwire distances ($a=15$, 20, 60 nm) are shown. Lines are guided for the eyes.
The remanence of a Stoner–Wohlfarth particle ensemble as a function of the demagnetisation process

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\[
(\Delta m_{H(x)})_{\text{exp}} = m_{d(x)}_{\text{exp}} - (1 - 2m_{r,\text{ac}}^{\text{as}}(x)_{\text{exp}})
\]
Investigation of magnetic interactions in large arrays of magnetic nanowires

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Separation = 55nm.
Increasing wire diameter implies increasing interaction

Separation = 95nm.
Increasing wire diameter implies increasing interaction