# Data for “Nanoscale mechanics of antiferromagnetic domain walls”

**Data.xlsx**

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| **Figure** | **Data Sheets** | **Notes** |
| Figure 1 | Fig 1B | 2D plot |
|  | Fig 1D | 1D plot + 2D plot (inset) |
| Figure 2 | Fig 2A | 2D plot |
|  | Fig 2B | XY plot |
| Figure 3 | Fig 3A | 2D plot |
|  | Fig 3B | 4 x 2D plot |
|  | Fig 3C | XY plot (bottom) |
| Figure S1 | Fig S1A | 2 x XY plot |
|  | Fig S1B | XY plot + XY plot (inset) |
|  | Fig S1C | 2 x 2D plot |
| Figure S2 | FigS2C.1 | 2D plot (top panel) |
|  | FigS2C.2 | 2D plot (bottom left panel) |
|  | FigS2C.3 | 2D plot (bottom right panel) |
| Figure S3 | FigS3 | XY plot + Histogram (inset) |
| Figure S4 | Fig S4B | 1D plot |
|  | Fig S4C | Histogram |
|  | Fig S4D | Histogram |
| Figure S5 | Fig S5A | XY plot |
|  | Fig S5B | XY plot |
| Figure S6 | Fig S6A | 2D plot |
|  | Fig S6B | 1D plot + XY plot (inset) |
| Figure S7 | Fig S7A | XY plot |
|  | Fig S7B | XY plot |
| Figure S8 | Fig S8A | XY plot |
|  | Fig S8B | XY plot |
| Figure S9 | Fig S9A | XY plot |
|  | Fig S9B | XY plot |
|  | Fig S9C | XY plot |
| Figure S10 | Fig S10A.1 | 2D plot (top panel) |
|  | Fig S10A.2 | 2D plot (bottom panel) |
|  | Fig S10B | 2 x 1D plot |

*Note*: Further descriptions of the individual datasets are given in the respective excel-sheets. All position values are given in um with the correct scaling from V to um according to the correction described in Section 1 of the SI.

**Matlab Code:**

*Plot2D.m:*

Code used to convert ESR resonance value (GHz) to stray field (uT) and plot it as a 2D plot.

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*Plot1D.m*:

Code for converting ESR resonance value (GHz) to stray field (uT) and plotting it as a 1D plot.

MesaAnalysis\_FigS4B\_Example.m:

Code for processing the ESR resonance values recorded during a linescan across a mesa, as shown in Fig S4B. The ESR resonance values are converted into stray field values, which are then fit by a theoretical model function of the stray field and a Metropolis-Hastings algorithm to infer the probabilities of the material parameters and sensor properties. Prior information based on all datasets is included in the algorithm as described in the main text.

DWAnalysis\_MH\_Fig1Dexample.py:

Code for processing the ESR resonance values recorded during a linescan across a domain wall as shown in Fig 1D. The ESR resonance values are converted into stray field values, which are then fit with a theoretical model function of the stray field and a Metropolis-Hastings algorithm to infer the probabilities of the material parameters and sensor properties. Prior information is included in the algorithm as described in the main text.

DWAnalysis\_DisplayFit\_Fig1Dexample.py:

Code for displaying the stray field data and model function of the domain wall stray field together for a given parameter set, as shown in Fig 1D.