A one-dimensional tunable magnetic metamaterial: erratum

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Abstract: We have detected an error in our data retrieval script which prepares the measured transmission data for the conversion to magnetic permeability. Correcting this error requires modification of Fig. 4(b) and Fig. 5 in the original publication. All methods, calculations and the conclusion in the published paper are still correct.

OCIS codes: (160.3918) Metamaterials; (310.2790) Guided waves; (310.6628) Subwavelength structures, nanostructures; (350.4010) Microwaves.

References and links

1. S. Butz, P. Jung, L. V. Filippenko, V. P. Koshelets, and A. V. Ustinov, "A one-dimensional tunable magnetic metamaterial," Opt. Express **21**, 22540–22548 (2013).

Due to an error in the data retrieval script, the imported magnitude of the transmission data used for calculating the magnetic permeability was not correct. This leads to a mistake in the results obtained for $\mu_{\mathrm{r,eff}}$. In section 4 of the paper [1], Fig. 4(b) and Fig. 5 have to be replaced by Fig. 1 and Fig. 2 below.

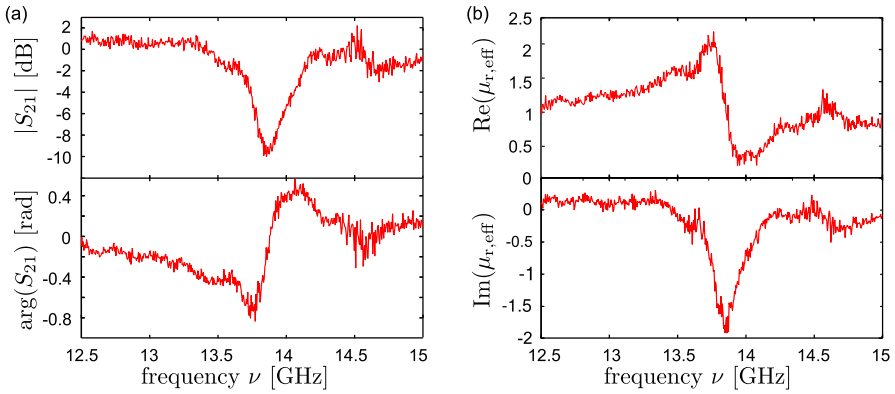

Fig. 1. Corrected version of Fig. 4 in the published paper. Only (b) is affected by the correction of the error. The data are measured at a temperature of 4.2 K.

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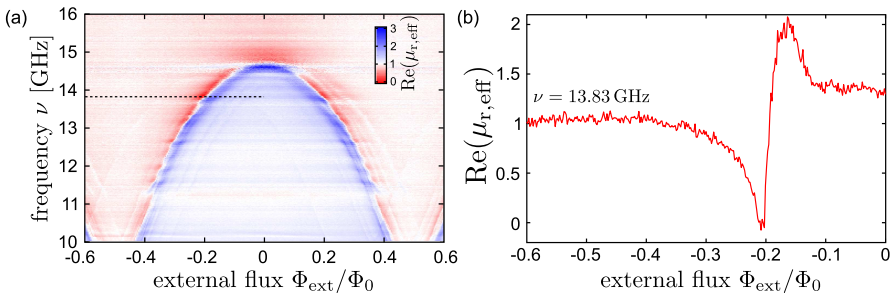

Fig. 2. Corrected version of Fig. 5 in the published paper.

Both, Fig. 1 and 2 show, that the magnetic permeability varies between -0.1 and 3. It should be emphasized, that a measurement on the same sample at lower temperature ($T = 2.3\,\mathrm{K}$) did show a stronger negative permeability due to an increased quality factor of the SQUID resonance. This result is presented in Fig 3. The lowest value of the real part of $\mu_{r,eff}$ reached in this measurment is $\mathrm{Re}(\mathrm{mu}_{r,eff}) = -1$.

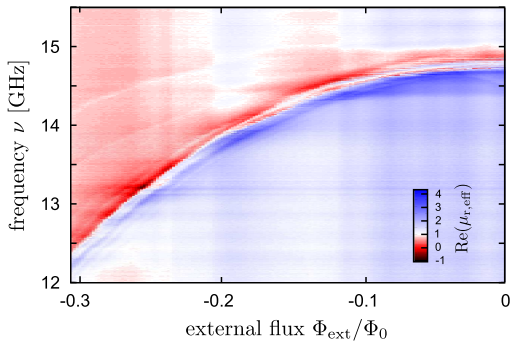

Fig. 3. Real part of the relative magnetic permeability measured at a temperature of 2.3 K.

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