

**Erratum: Vortex ratchet reversal: Role of interstitial vortices [Phys. Rev. B **83**, 174507 (2011)]**

D. Perez de Lara, M. Erekhinsky, E. M. Gonzalez, Y. J. Rosen, A. Gomez, Ivan K. Schuller, and J. L. Vicent  
(Received 5 February 2013; published 7 March 2013)

DOI: [10.1103/PhysRevB.87.099902](https://doi.org/10.1103/PhysRevB.87.099902)

PACS number(s): 74.78.Na, 74.25.F-, 74.25.Uv, 99.10.Cd

We have discovered a calibration error in the measurements performed at UCSD and presented in Fig. 1. The 1 micrometer bar shown in Fig. 1 corresponds to  $1.16\ \mu\text{m}$ . This implies that the minima shown in the magnetoresistance curves correspond well to the matching fields. This means that static interstitial vortices cannot be inferred from these minima.

Consequently, the following parts of the text should be corrected:

(a) The second sentence of the Abstract, which reads “Collective pinning with a vortex-lattice configuration different from the expected fundamental triangular ‘Abrikosov state’ is found,” should be deleted.

(b) Page 174507-2, first column, lines 3–5 should have “sides close to 600 nm” changed to “ $700 \pm 25\ \text{nm}$ ” and “periodicity of around 700 nm” changed to “ $810 \pm 30\ \text{nm}$ .”

(c) Page 174507-2, second column, lines 13 (starting with “However, . . .”) to 31 (ending with “. . . significant”) are incorrect and should be changed to the following:

“The matching fields predicted from the geometry of Fig. 1,  $36 \pm 3\ \text{Oe}$ , are in excellent agreement with measurements of minima in Fig. 2. This implies that the density of the vortex lattice matches the density of the pinning sites. Therefore, the system is exactly at the matching condition.”

(d) Page 174507-03, first column, lines 7 (starting with “Therefore. . .”) to 15 (ending with “. . .dc ratchet”) should be replaced by

“For the higher driving force, the signal of the dc voltage is reversed to positive values. In previous papers,<sup>4</sup> the existence of this ratchet reversal was associated with the presence of interstitial vortices.”

(e) Page 174507-4, second column, after line 14, add the following paragraph: “One possible explanation is that, although interstitial vortices do not exist statically, they are produced in the triangular array of triangles as follows. At the first appearance of the ratchet minimum (see Fig. 3), i.e., the negative  $V_{dc}$ , the vortices are driven out of their static pinning sites into an interstitial position. Once they are located there, the ac drive is not large enough to move them back into the asymmetric pinning sites. At this stage, they are forced to move along the interstitial lattice, which forms triangles pointing in the opposite direction of those in the pinning site lattice. Once the driving force becomes big enough to drive them back into the asymmetric pinning sites, the ratchet reverses sign. The ratchet reversal is still connected to the appearance of interstitial vortices. Note, however, that the detailed mechanism, present in the square array of triangles (Ref. 4), is different. In that case, the geometry forces the vortices to move from strong pinning site to strong pinning site. Thus, the ratchet reversal appears at a filling factor of 4 where interstitial vortices are produced statically.”