Erratum

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Abstract. This is an erratum concerning the article "Statistics of Lattice Points in Thin Annuli for Generic Lattices", Documenta Math. 11 (2005), 1–23

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1. The correct statement of Lemma 4.1 is: for every $a > 0$,

$$N_\Lambda(t) = \frac{\pi}{d}t^2 - \frac{\sqrt{t}}{d\pi} \sum_{\substack{\vec{k}\in\Lambda^*\setminus\{0\} \\ |\vec{k}|\le\sqrt{N}}} \frac{\cos\left(2\pi t|\vec{k}| + \frac{\pi}{4}\right)}{|\vec{k}|^{\frac{3}{2}}} + O(N^a) + O\left(\frac{t^3}{\delta_\Lambda(t^2)\sqrt{N}}\right),$$

provided that

$$\delta_\Lambda(y) < 1 \tag{1}$$

for all $y > 0$.

The proof of this lemma proceeds exactly as the proof of the correct statement corresponding to lemma 4.1 of [W] (see the erratum to [W]).

2. In the course of "unsmoothing" (that is, the proof of lemma 4.2), we invoke lemma 4.1 with $\delta_\Lambda(y) = \frac{c_1}{y^{K_0}}$ and $\delta_{\Lambda^*}(y) = \frac{c_2}{y^{K_0}}$, where c_1, c_2 are constants. We choose $N = T^H$, with

$$H := 8 + 4K_0,$$

and proceed as in the original text.

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References

[W] Wigman, Igor The distributions of lattice points in elliptic annuli. Q. J. Math. 57 (2006), no. 3, 395–423.

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