

# ADDENDUM

for the published version of

*Topics in Spectral Geometry*

Graduate Studies in Mathematics **237**

American Mathematical Society, 2023

Michael Levitin, Dan Mangoubi, and Iosif Polterovich

January 27, 2025

deletions are shown in red, and additions/replacements in green

- ☞ p. 19, lines above **Remark 1.2.14**: since an issue with the preprint [BouWat17] became known in July 2023, the best existing upper bound for  $R(\lambda)$  has exponent  $\frac{131}{416} + \varepsilon < 0.315$  [M. N. Huxley, *Exponential sums and lattice points III*, Proc. London Math. Soc. (3) **87** (2003), 591–609. doi: [10.1112/S0024611503014485](https://doi.org/10.1112/S0024611503014485)]
- ☞ p. 58, above **Exercise 3.1.6**: on reflection, the phrase “Proposition 3.1.3 follows immediately” is somewhat misleading. Therefore, for methodological purposes, we extend the argument outlining the proof of Proposition 3.1.3. Let  $\mathcal{E}_k := \text{Span}\{u_k, u_{k+1}, \dots\}$ . Then  $R[u] \geq \lambda_k$  for any  $u \in \mathcal{E}_k \setminus \{0\}$ . If we now consider an arbitrary  $\mathcal{L} \subset \text{Dom}(\mathcal{Q})$  with  $\dim \mathcal{L} = k$ , then there exists  $u \in \mathcal{E}_k \cap \mathcal{L} \setminus \{0\}$  (since the codimension of  $\mathcal{E}_k$  is  $k - 1$ ), and therefore

$$\max_{u \in \mathcal{L} \setminus \{0\}} R[u] \geq \lambda_k.$$

On the other hand, the equality is attained if we take  $\mathcal{L} = \text{Span}\{u_1, \dots, u_k\}$ .

- ☞ p. 302, reference [ColGGS22]: add full bibliographical data, *Rev. Mat. Complut.* **37** (2024), 1–161. doi: [10.1007/s13163-023-00480-3](https://doi.org/10.1007/s13163-023-00480-3)
- ☞ p. 304, reference [FilLPS23]: add full bibliographical data, *Invent. Math.* **234** (2023), 129–169. doi: [10.1007/s00222-023-01198-1](https://doi.org/10.1007/s00222-023-01198-1)
- ☞ p. 310, reference [KarSte20]: add bibliographical data, *J. Eur. Math. Soc.* (2023). doi: [10.4171/JEMS/1401](https://doi.org/10.4171/JEMS/1401)

- ☞ p. 310, reference [KarSte22]: add full bibliographical data, *Invent. Math.* **236** (2024), 713–778. doi: [10.1007/s00222-024-01247-3](https://doi.org/10.1007/s00222-024-01247-3)
- ☞ p. 315, reference [NurRowShe19]: add bibliographical data, *Ann. Math. Québec* (2024). doi: [10.1007/s40316-024-00237-4](https://doi.org/10.1007/s40316-024-00237-4)
- ☞ p. 317, reference [Ros22b]: add full bibliographical data, *Math. Z.* **305** (2023), article 62. doi: [10.1007/s00209-023-03382-8](https://doi.org/10.1007/s00209-023-03382-8)
- ☞ p. 332, reference [Roz23]: add full bibliographical data, *J. Spectr. Theory* **13** (2023), no. 3, 755–803. doi: [10.4171/JST/477](https://doi.org/10.4171/JST/477)