

ADDENDUM

for *Topics in Spectral Geometry*, preliminary online version
dated May 29, 2023

Michael Levitin, Dan Mangoubi, and Iosif Polterovich

January 27, 2025

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

☞ **p. 28, two 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. 68, 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 $\mathcal{L} \subset \text{Dom}(\mathcal{L})$ 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. 314, reference [BerGMR21]:** add full bibliographical data, *J. Math. Anal. Appl.* **538**:2 (2024), 128460. doi: [10.1016/j.jmaa.2024.128460](https://doi.org/10.1016/j.jmaa.2024.128460)

☞ **p. 317, reference [ColGGS22]:** add full bibliographical data, *Rev. Mat. Complut.* **37** (2023), 1–161. doi: [10.1007/s13163-023-00480-3](https://doi.org/10.1007/s13163-023-00480-3)

☞ **p. 319, 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. 324, reference [KarLagPol22]:** add full bibliographical data, *Arch. Rational Mech. Anal.* **47** (2023), article no. 77. doi: [10.1007/s00205-023-01912-6](https://doi.org/10.1007/s00205-023-01912-6)

☞ **p. 324, reference [KarSte20]:** add bibliographical data, *J. Eur. Math. Soc.* (2023). doi: [10.4171/JEMS/1401](https://doi.org/10.4171/JEMS/1401)

- ☞ p. 324, 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. 330, 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. 331, 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**:3 (2023), 755–803. doi: [10.4171/JST/477](https://doi.org/10.4171/JST/477)