

Errata and up-to-date for “*Reshetnyak’s Theory of Subharmonic Metrics*”

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July 15, 2024

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1 Errata and misprints

- p.53 replace

$$|dz|^2 = \frac{1}{2} (dx \otimes dx + dx \otimes dy + dy \otimes dx + dy \otimes dy)$$

by

$$|dz|^2 = dx \otimes dx + dy \otimes dy$$

- p. 56, replace ”Proposition 5.2 in Chapter 2” by ”Proposition 2.11 in Chapter 2”
- p. 90 first line of the proof, replace f by $\ln |f|$
- p. 180 first equation replace

$$\rho_{\lambda_n}(z_0, \zeta_0) \leq s_{\lambda_n}(S_n) \longrightarrow s_{\lambda_0}(S_0) \leq \rho_{\lambda_0}(z_0, \zeta_0) + \epsilon$$

by

$$\rho_{\lambda_n}(z_n, \zeta_n) \leq s_{\lambda_n}(S_n) \longrightarrow s_{\lambda_0}(S_0) \leq \rho_{\lambda_0}(z_0, \zeta_0) + \epsilon$$

- p. 217 a $\frac{1}{2\pi}$ is missing in front of the integral in the second equation
- p.324 proof of Theorem 7, replace [10, Theorem 13.2] by [10, Theorem 13.3]

1.1 Misprints added by Springer

- p. 74 Second sentence after proof of Proposition 4.35 ”Deeper” → ”Deeper,”
- p. 120 replace ”page on 96 in [92]” by ”page 96 in [92]”
- p. 172 equation before Theorem 3.2 replace $\|z\|$ by $|z|$

2 Up-to-dates

2.1 Convergence theorem for compact surfaces

In the article of M. Troyanov “*On Alexandrov’s Surfaces with Bounded Integral Curvature*” (Chapter 2 of [FS23]), Problem 9.1 asks for a version for compact surfaces of Reshetnyak’s Convergence Theorem. A proof is presented in [CL22]. This reference also contains results when the conformal structures vary.

2.2 Limit of flat metrics

Subharmonic metrics may be presented as metric surfaces which are (locally) uniform limit of flat metrics with a uniform bound of the curvature (see Theorems 4.132 and 4.163 in [FS23]). For limits when curvature condition is relaxed can be found in [NR21, NR22].

For the record, results about limits of metric surfaces mentioned in [FS23] are [Bur04, Bur65, Cas92, Shi99].

References

- [Bur65] Yu. D. Burago. The closure of a class of manifolds with bounded curvature. *Trudy Mat. Inst. Steklov.*, 76:141–147, 1965. English translation in [?].
- [Bur04] Yu. Burago. Bi-Lipschitz-equivalent Aleksandrov surfaces. II. *Algebra i Analiz*, 16(6):28–52, 2004.
- [Cas92] Mark Cassorla. Approximating compact inner metric spaces by surfaces. *Indiana Univ. Math. J.*, 41(2):505–513, 1992.
- [CL22] Jingyi Chen and Yuxiang Li. Uniform convergence of metrics on alexandrov surfaces with bounded integral curvature, 2022.
- [FS23] François Fillastre and Dmitriy Slutskiy, editors. *Reshetnyak’s theory of subharmonic metrics*. Cham: Springer, 2023.
- [NR21] Dimitrios Ntalampekos and Matthew Romney. Polyhedral approximation of metric surfaces and applications to uniformization. *arXiv e-prints*, page arXiv:2107.07422, July 2021.
- [NR22] Dimitrios Ntalampekos and Matthew Romney. Polyhedral approximation and uniformization for non-length surfaces. *arXiv e-prints*, page arXiv:2206.01128, June 2022.
- [Shi99] Takashi Shioya. The limit spaces of two-dimensional manifolds with uniformly bounded integral curvature. *Trans. Amer. Math. Soc.*, 351(5):1765–1801, 1999.