# Errata for "Faraday Cage Estimation of Normals for Point Clouds and Ribbon Sketches"

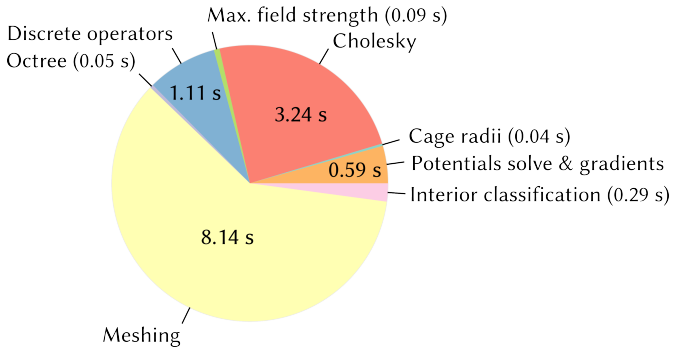
DANIEL SCRIVENER, Boston University, USA
DANIEL CUI, Boston University, USA
ELLIS COLDREN, Boston University, USA
S. MAZDAK ABULNAGA, Massachusetts Institute of Technology / Harvard Medical School, USA
MIKHAIL BESSMELTSEV, Université de Montréal, Canada
EDWARD CHIEN, Boston University, USA

*Table 2.* The original running times for our method were recorded using a debug build of our implementation. As such, they are 3-10x slower than timings obtained using a release build. This applies only to the timing of our method and not other methods referenced in Table 2. An updated version of Table 2 is provided below:

Timing (in seconds) of methods on three models: M1 = `torus`, M2 = huapen, M3 = `test_bed_0523`. On tested inputs, FaCE generally performs favorably relative to iPSR, which may take longer to converge on noisy inputs. Accurate timings for BIM and GCNO could not be obtained on our hardware due to architectural issues with the reference implementations; see [Lin et al. 2024; Liu et al. 2024; Xu et al. 2023] for their results, typically much slower than FaCE even on more powerful systems. For detailed runtime analysis, refer to §5 "Runtime" and Supplementary §3 in [Liu et al. 2024].

| Method | iPSR (2022) | | | Ours | | | WNNC (2024) | | |
|---|---|---|---|---|---|---|---|---|---|
| No. points | M1 | M2 | M3 | M1 | M2 | M3 | M1 | M2 | M3 |
| 1,000 | 46.73 | 149.45 | 109.51 | 0.91 | 0.81 | 0.73 | 1.95 | 1.69 | 2.10 |
| 5,000 | 52.09 | 72.71 | 202.02 | 5.84 | 5.73 | 5.16 | 2.17 | 2.78 | 2.76 |
| 10,000 | 64.80 | 84.14 | 373.17 | 13.57 | 13.56 | 12.90 | 4.35 | 4.08 | 4.02 |
| 20,000 | 64.58 | 85.01 | 421.19 | 33.89 | 32.21 | 32.71 | 6.21 | 6.15 | 5.85 |

*Figure 15.* We have updated Figure 15 with timings from the release build. Meshing remains the main performance bottleneck; discrete operator construction now requires less time than the Cholesky factorization.




Breakdown of running time for our method on `torus` input (10,000 samples, total 13.55 s). Meshing poses the main performance bottleneck.

## References

Siyou Lin, Zuoqiang Shi, and Yebin Liu. 2024. Fast and Globally Consistent Normal Orientation based on the Winding Number Normal Consistency. *ACM Transactions on Graphics* 43, 6 (Nov. 2024), 1–19.

Weizhou Liu, Xingce Wang, Haichuan Zhao, Xingfei Xue, Zhongke Wu, Xuequan Lu, and Ying He. 2024. Consistent Point Orientation for Manifold Surfaces via Boundary Integration. In *ACM SIGGRAPH 2024 Conference Papers (Siggraph '24)*. Association for Computing Machinery, New York, NY, USA, Article 54.

Rui Xu, Zhiyang Dou, Ningna Wang, Shiqing Xin, Shuangmin Chen, Mingyan Jiang, Xiaohu Guo, Wenping Wang, and Changhe Tu. 2023. Globally Consistent Normal Orientation for Point Clouds by Regularizing the Winding-Number Field. *ACM Trans. Graph.* 42, 4, Article 111 (July 2023).