

## Response egusphere-2024-2194

The authors have done an excellent job with the revisions, and I no longer have any outstanding concerns. I recognize and appreciate the thoughtful attention they gave to the reviewer feedback. The updated Figures 2 and 3 stand out as particularly well-crafted.

*Below are a few very minor grammatical/punctuation issues:*

**Line 304:**  $4 \cdot \text{Area}_i / (\pi \cdot \text{major})$  → Replace asterisk with multiplication symbol

Replace hyphens with en-dash for ranges throughout manuscript (eg **Line 305-306:** 0-1 should be 0–1 )

**Line 309:** 1000  $\mu\text{m}^2$  →  $\mu$  instead of u

**Line 312:** ImageJ, and a Tukey-Kramer honestly significant difference

**Line 320:** “performed a PCA analysis” is redundant (i.e. Principal Component Analysis analysis”)

**Line 326** a k-means clustering → the article “a” is unnecessary

**Line 327:** capitalize “z score” since starting sentence

Describe scans as either Micro-Ct or  $\mu\text{CT}$  rather than switching between abbreviations. Is the distinction between CT and  $\mu\text{CT}$  (lines 360 to 370 for example) denoting an actual difference in resolution or is it referring to the same  $\mu\text{CT}$  scan?

**Figure 8 caption line 1:** K-means clustering → should be “clustering”

circularity z score=0.9”, “depth z score =1.2 → ensure correct spacing around equal signs eg **Lines 546, 549, 551** etc

“subglacial” is standard phrasing in the literature rather than “sub-glacial” (note that both are used in **line 646**)