

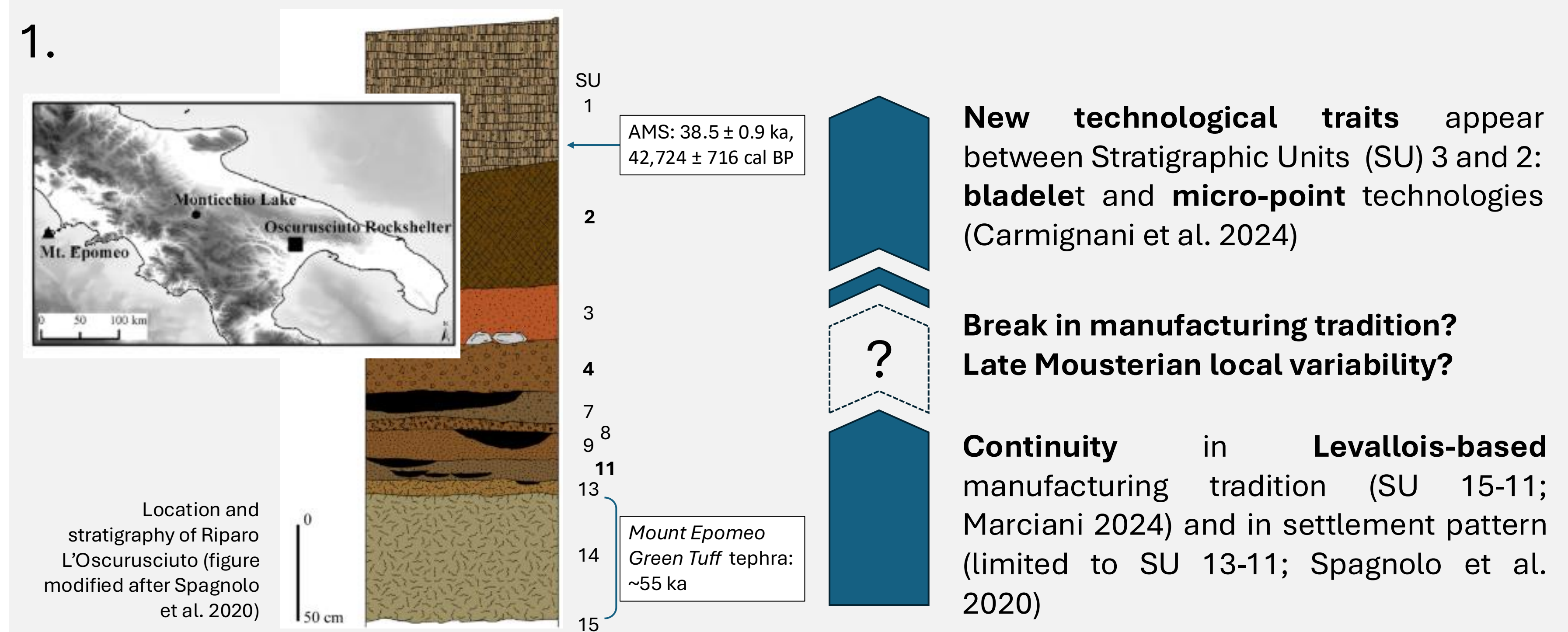
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Technological continuity and variability along the Late Middle Palaeolithic sequence of Riparo L'Oscurusciuto (Apulia, Italy) – A hybrid traditional and 3D-based approach

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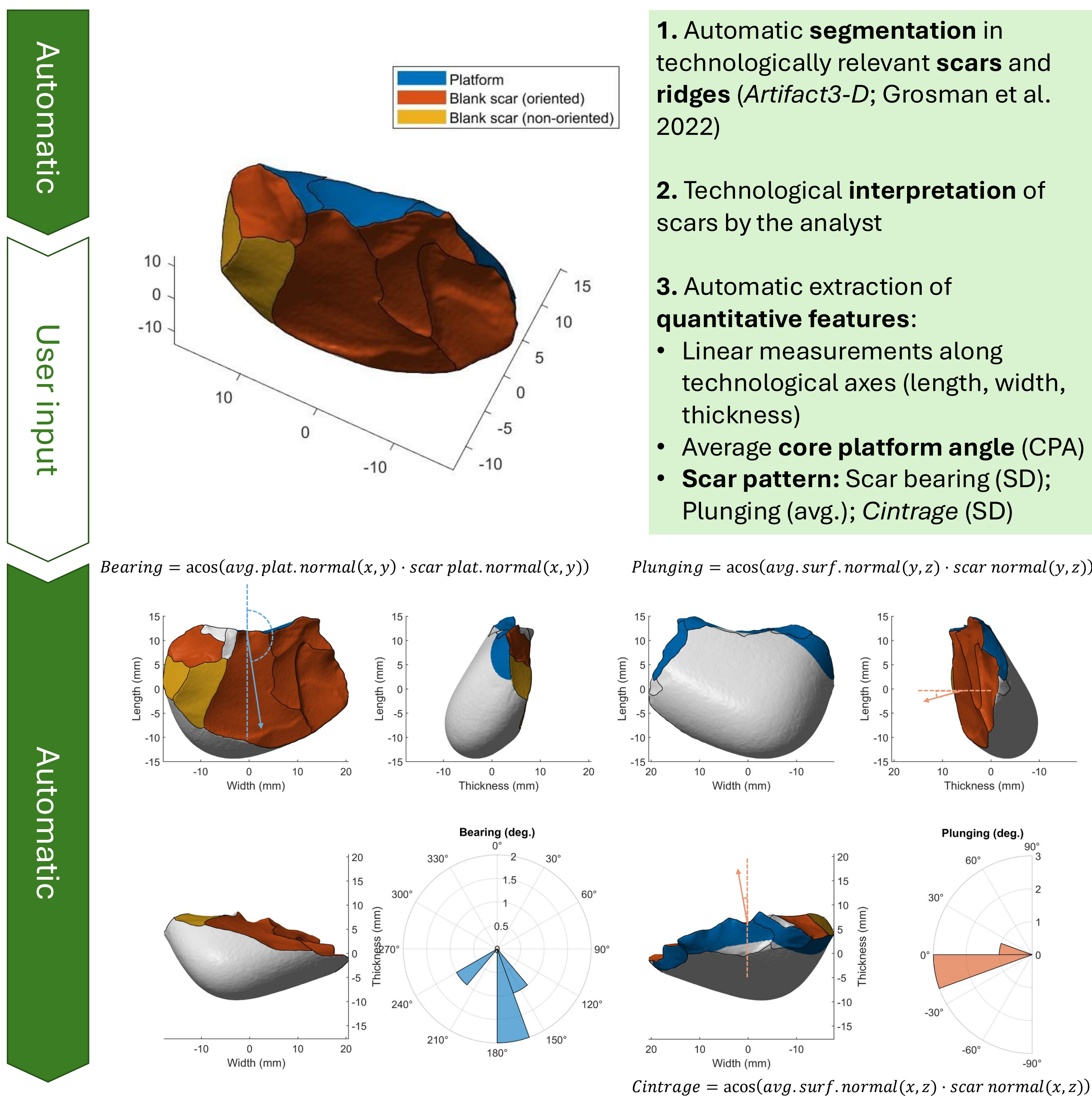
2. Goal

- Test technological continuity/variability between SU 11, 4, and 2
- Multiple reduction sequence features measured on cores provide multiple lines of evidence
- 3D-based quantitative features increase the objectivity and repeatability
- Combine available software and purposely developed digital analysis tools

3. Materials

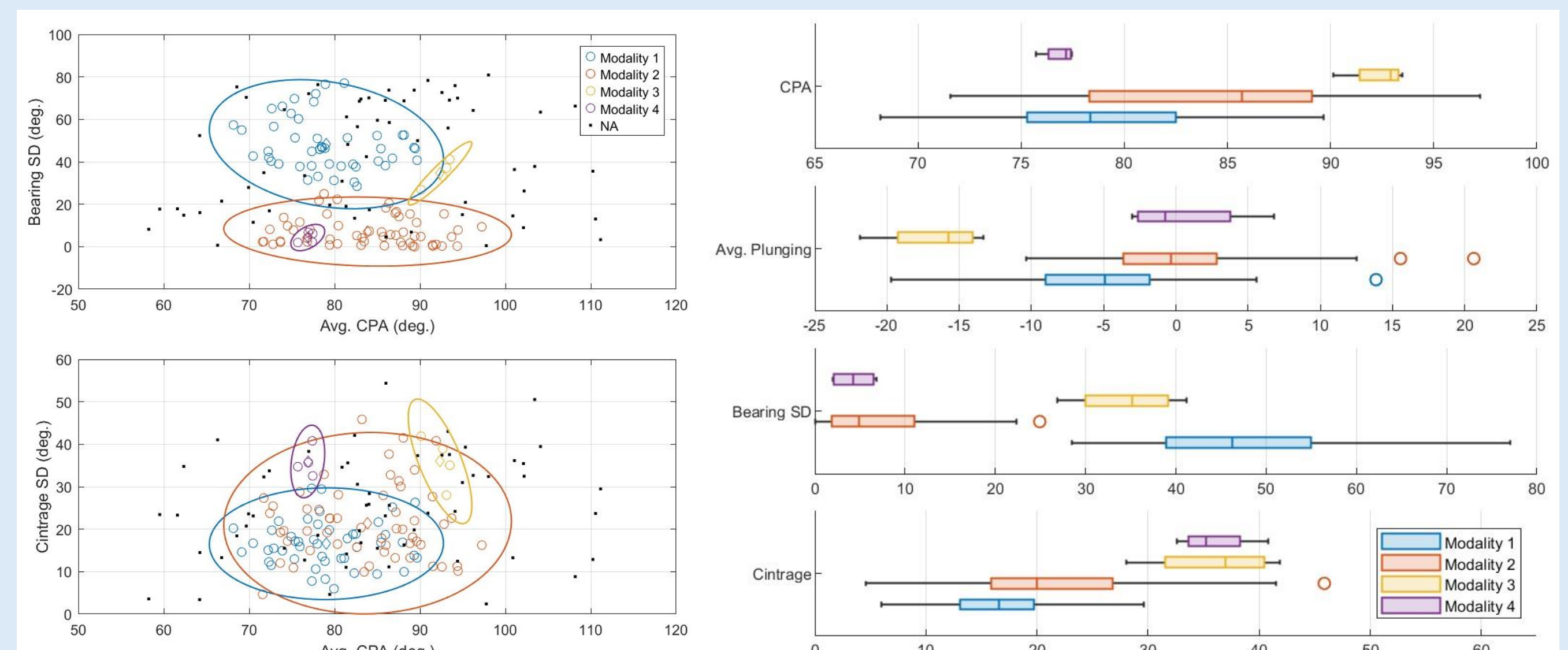
	SU 2	SU 4	SU 11
Cores (reduction sequences)	65	38	66

4. Hybrid workflow



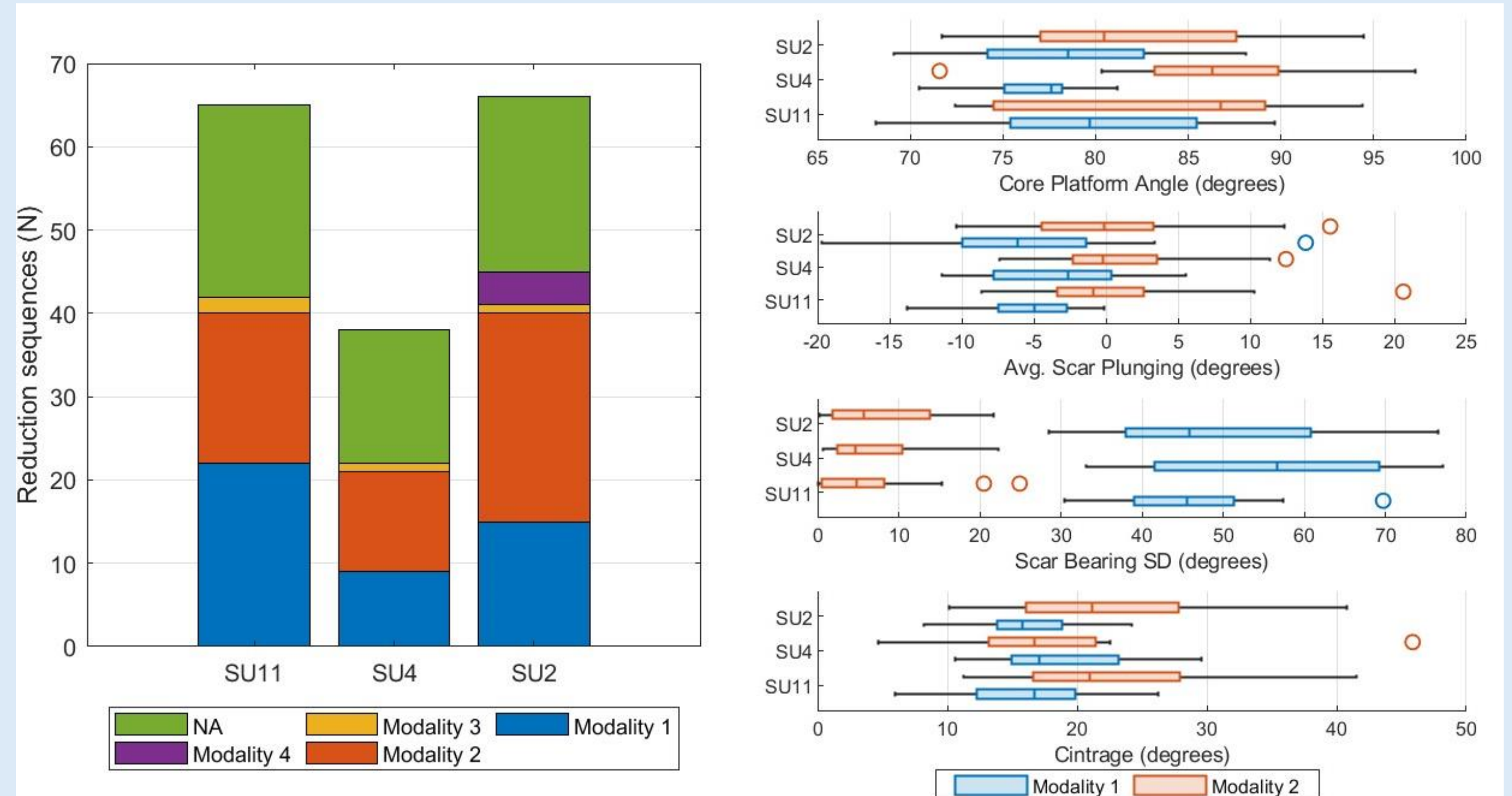
5. Preliminary results

Four reduction modalities based on geometrical features clustering (DBSCAN)



Mod.	Items	CPA (avg.)	Plunging (avg.)	Bearing (SD)	Cintrage (SD)
1	46	75-80°	-5°; flat	40-55°; centripetal	10-20°
2	55	80-90°	0°; flat	<10°; unipolar	15-30°
3	4	90-95°	-15 - 20°; steep	30-40°; convergent	30-40°
4	4	75°	0°; flat	<10°; unipolar	30-40°
NA	60	-	-	-	-

Stratigraphic Unit comparison



Innovation: Modality 4 appears only from SU 2

Continuity: No significant variability among layers in features of modalities 1 and 2

6. Conclusions and Perspectives

- Preliminary results suggest that the proposed hybrid approach combining traditional and 3D-based technological analysis allows the **objective tracking** of continuity and variability trends in traits of the **lithic manufacturing processes**.
- **Continuity** in features of reduction modality 1 and 2 along the sequence suggests that, between ca. 55 to 42 Ka (SU 15 – 2; Higham 2024), the rockshelter was occupied by groups sharing the same **long-lasting manufacturing tradition**.
- The appearance of a **novel reduction modality** toward the end of the sequence (SU 2) might represent a **locally developed** innovation or the **influence** of neighboring groups.
- Crossing **3D-based** and **traditional attributes** for further, more detailed insight into lithic manufacturing
- New lines of evidence from the hybrid analysis of **production blanks** (points, flakes, and blades) and **other artifact categories** might support or deny the trends highlighted by core-reduction modalities.
- **Enlarging the scope** of the analysis to other coeval sites in Southern Italy and the neighboring regions could provide a novel insight into the **movement of people and ideas** characterizing the end of the Middle and the onset of the Upper Palaeolithic.

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