
Quantitative trumps qualitative: developing automated approaches to phytolith analysis

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Résumé

Based on the trajectory of other disciplines that analyze biological shape data, it is clear that phytolith analysis will become increasingly quantitative in the future, with greater emphasis on computer-assisted automation. Although phytolith researchers have successfully addressed many research questions through qualitative approaches to phytolith analysis, quantitative approaches, if practicable, offer several significant advantages. Computer-assisted analysis will enable the use of more efficient morphometric descriptors of phytolith shape and ornamentation, the development of semi-automated quantitative classification systems and the construction of widely accessible, cloud-based morphometric databases. Because numerous disciplines have progressed further along this path, phytolith researchers can draw on the considerable body of research available in the literature. Transitioning phytolith analysis into a fully quantitative, automated scientific discipline is a worthy long-term goal that will undoubtedly require decades of work to achieve. Phytolith researchers can contribute to progress toward this goal by talking with each other about what is needed, developing standardized protocols when appropriate, and testing, developing, reporting on, and sharing successful new quantitative approaches they have tried.

Mots-Clés: Morphometrics, Multivariate analysis, Automated classification, Elliptic Fourier analysis

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