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A Semi Automated Method for Laminated Sediments Analysis

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ABSTRACT
We developed a software performing laminae counting, thickness measurements, spectral and wavelet analysis of laminated sediments embedded signal. We validated the software on varved sediments. Varved laminae are automatically counted using an image analysis classification method based on K-Nearest Neighbors (KNN) algorithm. In a next step, the signal corresponding to varved black laminae thickness variation is retrieved. The obtained signal is a good proxy to study the paleoclimatic constraints controlling sedimentation. Finally, the use of spectral and wavelet analysis methods on the variation of black laminae thickness revealed the existence of frequencies and periods which can be linked to known paleoclimatic events.

KEYWORDS

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