147. Tuning Composite2Change for Forest Disturbance Detection across Europe

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Satellite observations support forest disturbance monitoring over large areas, but the identification of disturbance events from spectral time series is sensitive to methodological choices. This study examines how temporal segmentation parameters and disturbance magnitude thresholds influence the performance of Composite2Change (C2C) across European forests. Using annual Landsat Normalized Burn Ratio (NBR) time series, we evaluated ten segmentation configurations and five magnitude thresholds against a photointerpreted reference dataset for 2000–2023. Performance was assessed using annual pixel-level confusion matrices, summarised through overall accuracy (OA) and the Matthews correlation coefficient (MCC). The highest mean annual MCC (0.404) was obtained with a maximum fitting error of 0.055, a spike tolerance of 0.85 and an NBR magnitude threshold of −0.3, yielding a mean OA of 90.58%. Configuration rankings varied with the magnitude threshold, while less restrictive thresholds reduced omission errors at the expense of increased commission. These findings highlight the interaction between trajectory fitting and event selection in C2C and support their joint evaluation when selecting parameters for forest disturbance monitoring.