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Detection of extreme events in palaeo-climate proxy data using recurrence plots

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Recurrence plots are powerful tools to detect changes in the dynamics of a system. We demonstrate a technique which detects extreme events by means of recurrences.

The El Nino/ Southern Oscillation (ENSO) has an important impact on the weather in South America. Its influence in the past can even be found in archives for rainfall variability as derived from lake sediments. We apply the proposed method on colour variation of lake sediments in NW Argentina deposited 35 kyr ago in order to detect extreme events and to support the hypothesis that the ENSO phenomenon was already active during this period.