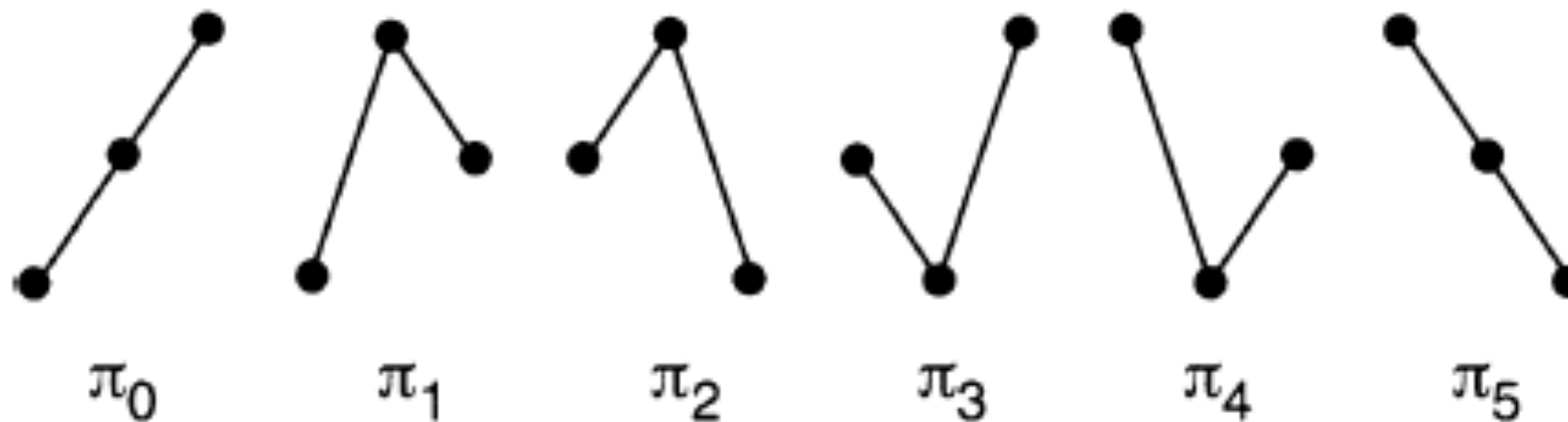# Order Patterns Recurrence Plot

- Sort of "filter": not recurrences of values, but order patterns

Fig. 2 Order patterns for dimension $d = 3$ (tied ranks $u_i = u_{i+\tau}$ are assumed to be rare)
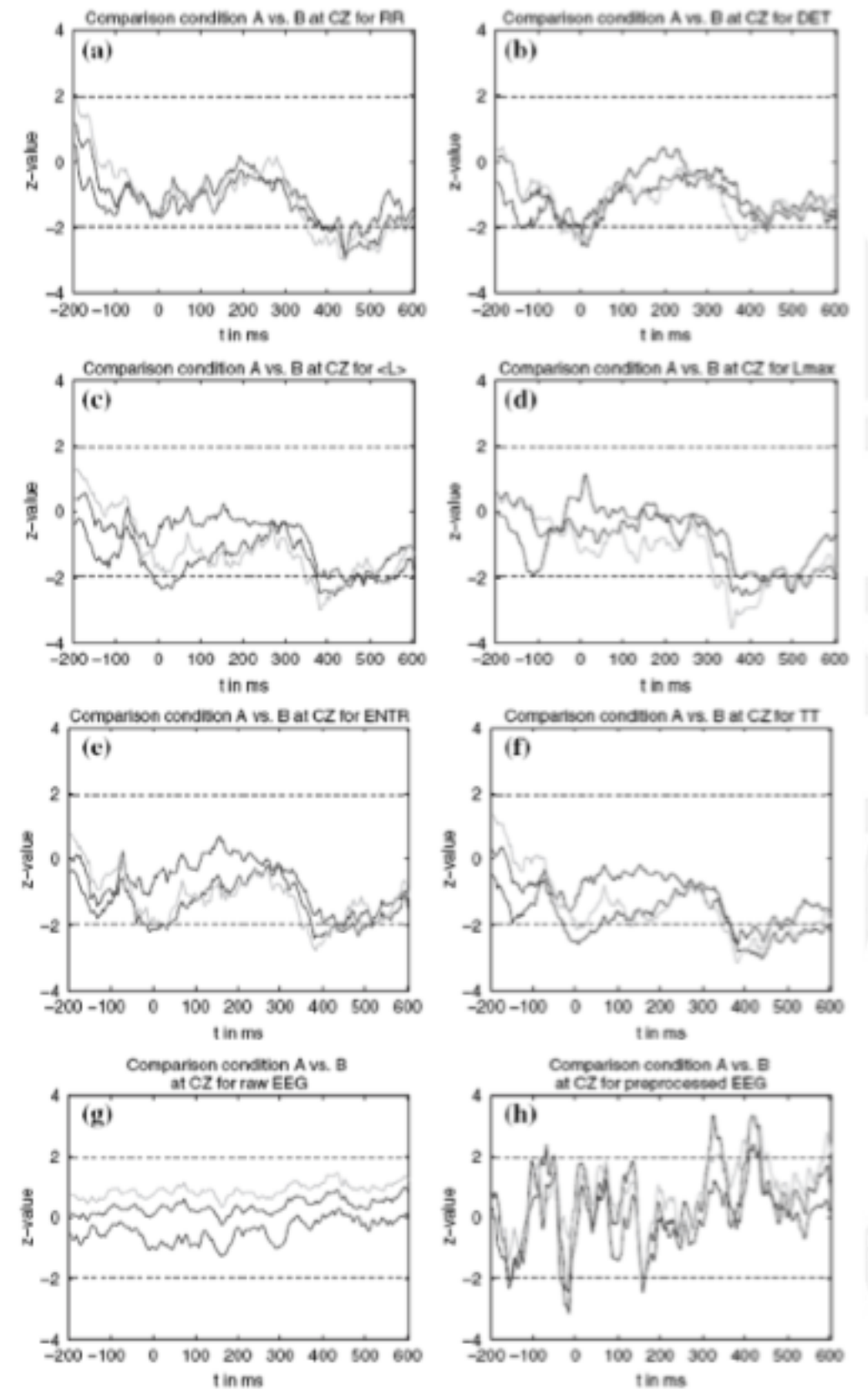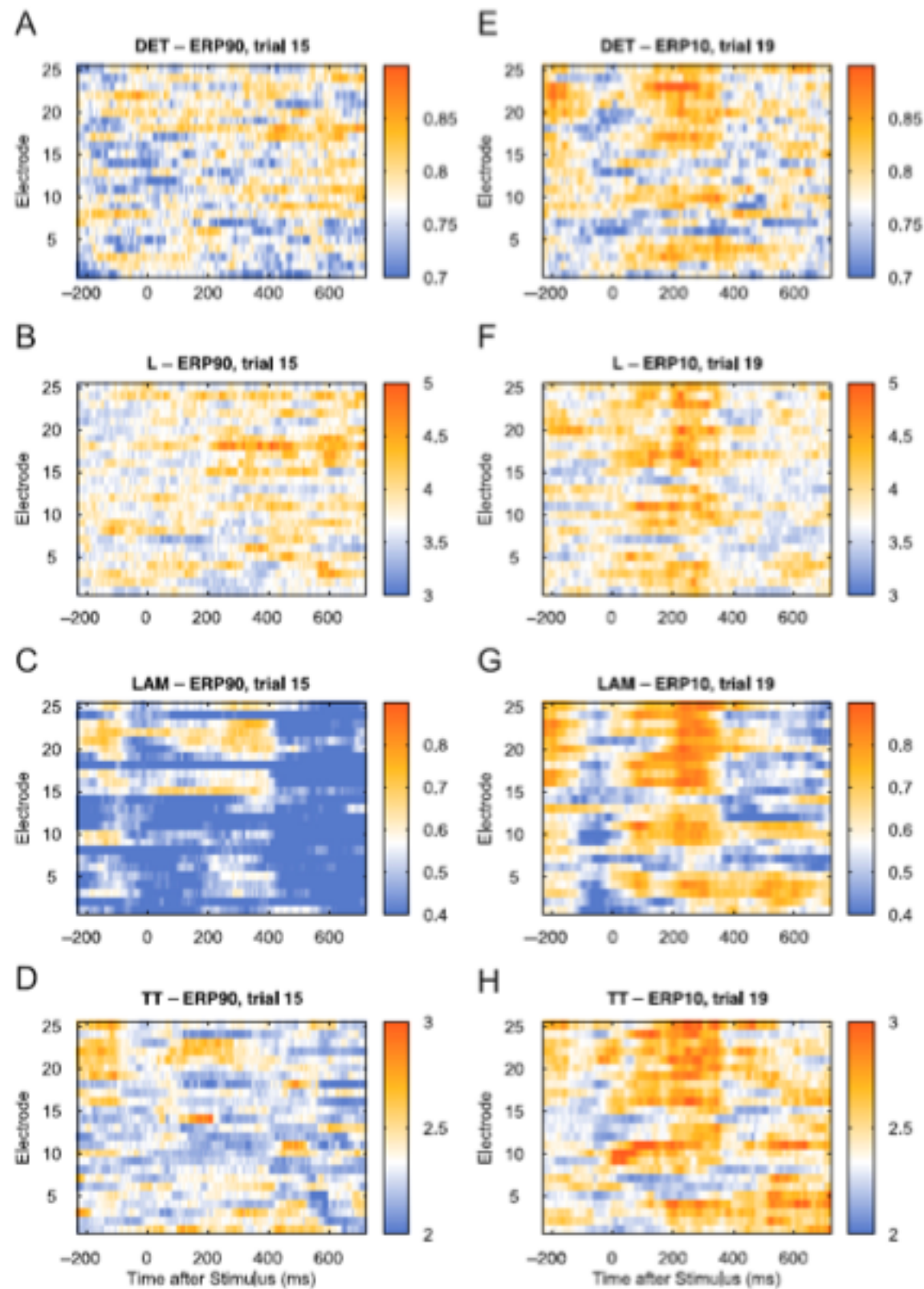
Order patterns recurrence plots in the analysis of ERP data

Stefan Schinkel · Norbert Marwan ·
Jürgen Kurths

Schinkel, S., Marwan, N., & Kurths, J. (2007). Order patterns recurrence plots in the analysis of ERP data. *Cognitive neurodynamics*, *1*(4), 317-25. doi:10.1007/s11571-007-9023-z

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A — DET – ERP90, trial 15
B — L – ERP90, trial 15
C — LAM – ERP90, trial 15
D — TT – ERP90, trial 15

E — DET – ERP10, trial 19
F — L – ERP10, trial 19
G — LAM – ERP10, trial 19
H — TT – ERP10, trial 19

(a) Comparison condition A vs. B at CZ for RR
(b) Comparison condition A vs. B at CZ for DET
(c) Comparison condition A vs. B at CZ for <L>
(d) Comparison condition A vs. B at CZ for Lmax
(e) Comparison condition A vs. B at CZ for ENTR
(f) Comparison condition A vs. B at CZ for TT
(g) Comparison condition A vs. B at CZ for raw EEG
(h) Comparison condition A vs. B at CZ for preprocessed EEG

Schinkel, S., Marwan, N., & Kurths, J. (2009). Brain signal analysis based on recurrences. *Journal of physiology, Paris*, *103*(6), 315-23. Elsevier Ltd. doi:10.1016/j.jphysparis.2009.05.007

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