
Abbreviations and Notations

EEG	Electroencephalogram
EMG	Electromyogram
D_{\max}	maximum Difference
p	level of significance
s	seconds
sp	sample points
mm	millimetre

Recurrence Plots

ENTR	Entropy (Shannon entropy of the frequency distribution of diagonal lines in the RP)
DET	Determinism (percentage of recurrence points in the RP that are part of diagonal lines of length larger than l_{\min})
IAAFT	Iterated Amplitude Adjusted Fourier Transform
LAM	Laminarity (percentage of recurrence points in the RP that are part of vertical lines of length larger than v_{\min})
LOI	Line of identity
MDL	Mean diagonal line (average length of diagonal line segments in the RP)
RP	Recurrence Plots
RQA	Recurrence Quantification Analysis
RR	Recurrence Rate (percentage of recurrence points in the RP)
TT	Trapping Time (average length of vertical line segments in the RP)

$\mathbf{R}_{i,j}$	recurrence matrix
N	number of measured points x_i (length of time series)
l	length of diagonal lines
l_{\min}	minimal length of diagonal lines
$P(l)$	Probability to find a diagonal line of length l in the RP
$P(v)$	Probability to find a vertical line of length v in the RP
S_1	Set of neighbors of a certain state \mathbf{x}_i with respect to the threshold epsilon
S_2	same as S_1 but excluding consecutive neighbors, e.g. if \mathbf{x}_i and \mathbf{x}_{i+1} are in S_1 , then \mathbf{x}_{i+1} is excluded
T_1	recurrence times of the first type
T_2	recurrence times of the second type
v	length of vertical lines
v_{\min}	minimal length of vertical lines
x_i	measured time series, where i denotes the time
\mathbf{x}_i	generated d -dimensional vector from d measured time series x_i , e.g. of the four limbs
ϵ	threshold for the computation of the RP
$\ \cdot\ $	norm
$\Theta(\cdot)$	Heaviside function.

Symbolic Dynamics

z	binomial z score
n_1	size of a shifting window
n_2	length of a movement sequence
p_1	relative frequency of the absolute distribution x_1 of a configuration x in a shifting window
p_2	relative frequency of the absolute distribution x_2 of a configuration x in a movement sequence
s_n	2 symbol encoding
x_1	distribution of a configuration x in a shifting windows
x_2	distribution of a configuration x in a movement sequence
θ	threshold for the symbolic encoding

Configurations (right arm, right leg, left arm, left leg)

0000	all four limbs proximal to the trunk
0001	proximal: right arm, right leg, left arm - distant: left leg
0010	proximal: right arm, right leg, left leg - distant: left arm
0100	proximal: right arm, left arm, left leg - distant: right leg
1000	proximal: right leg, left arm, left leg - distant: right arm
1010	proximal: right arm, left arm - distant: right leg, left leg;
0101	proximal: right leg, left leg - distant: right arm, left arm
0011	proximal: right arm, right leg - distant: left arm, left leg
1100	proximal: left arm, left leg - distant: right arm, right leg
0110	proximal: right arm, left leg - distant: right leg, left arm
1001	proximal: right leg, left arm - distant: right arm, left leg
0111	proximal: right arm - distant: right leg, left arm, left leg
1011	proximal: right leg - distant: right arm, left arm, left leg
1101	proximal: left arm - distant: right arm, right leg, left leg
1110	proximal: left leg - distant: right arm, right leg, left arm
1111	all four limbs distant to the trunk