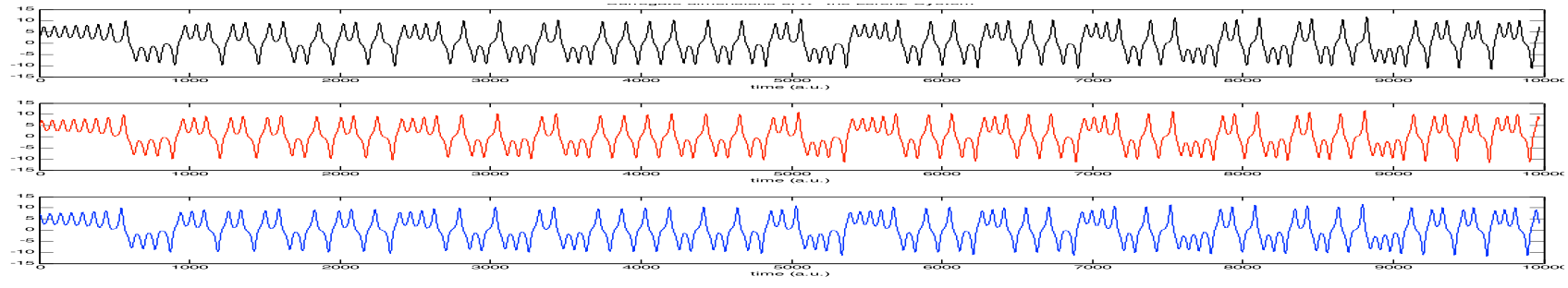
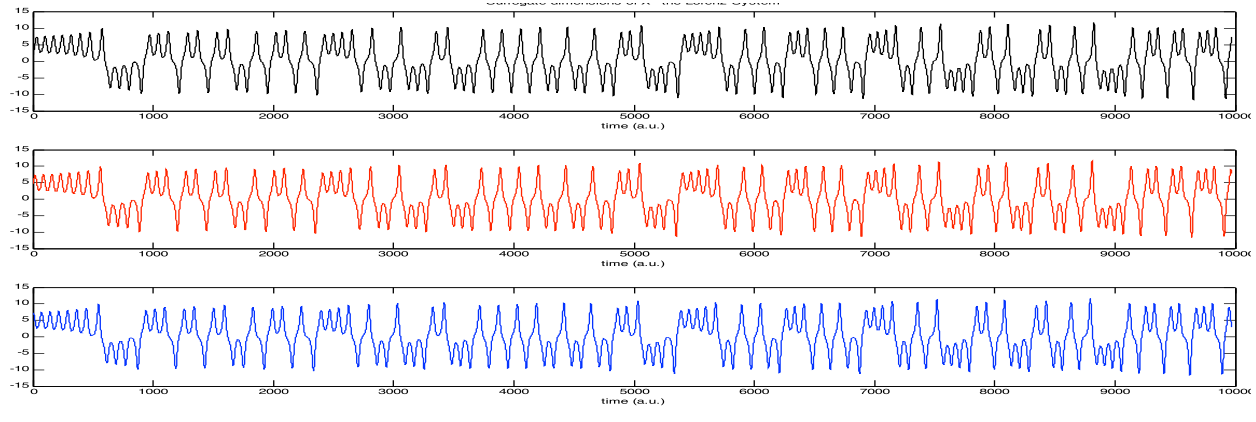
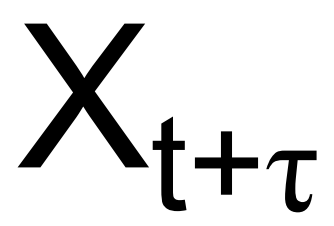
IN·DEI·NOMINE·F

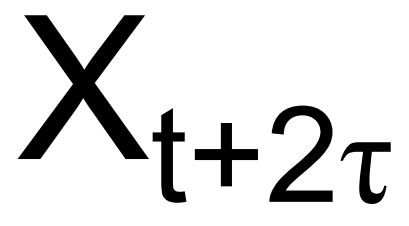
Radboud University Nijmegen

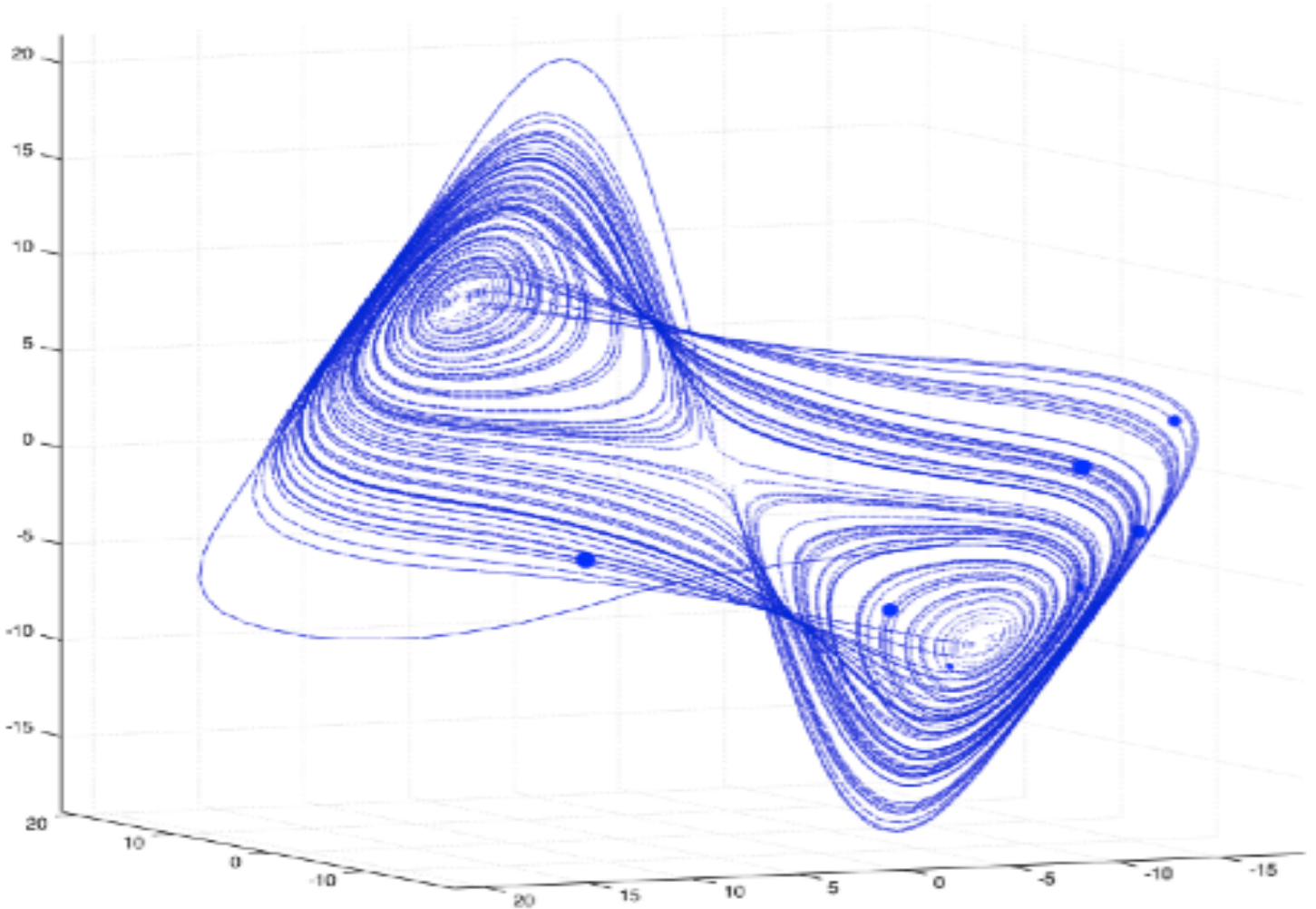
Behavioural Science Institute

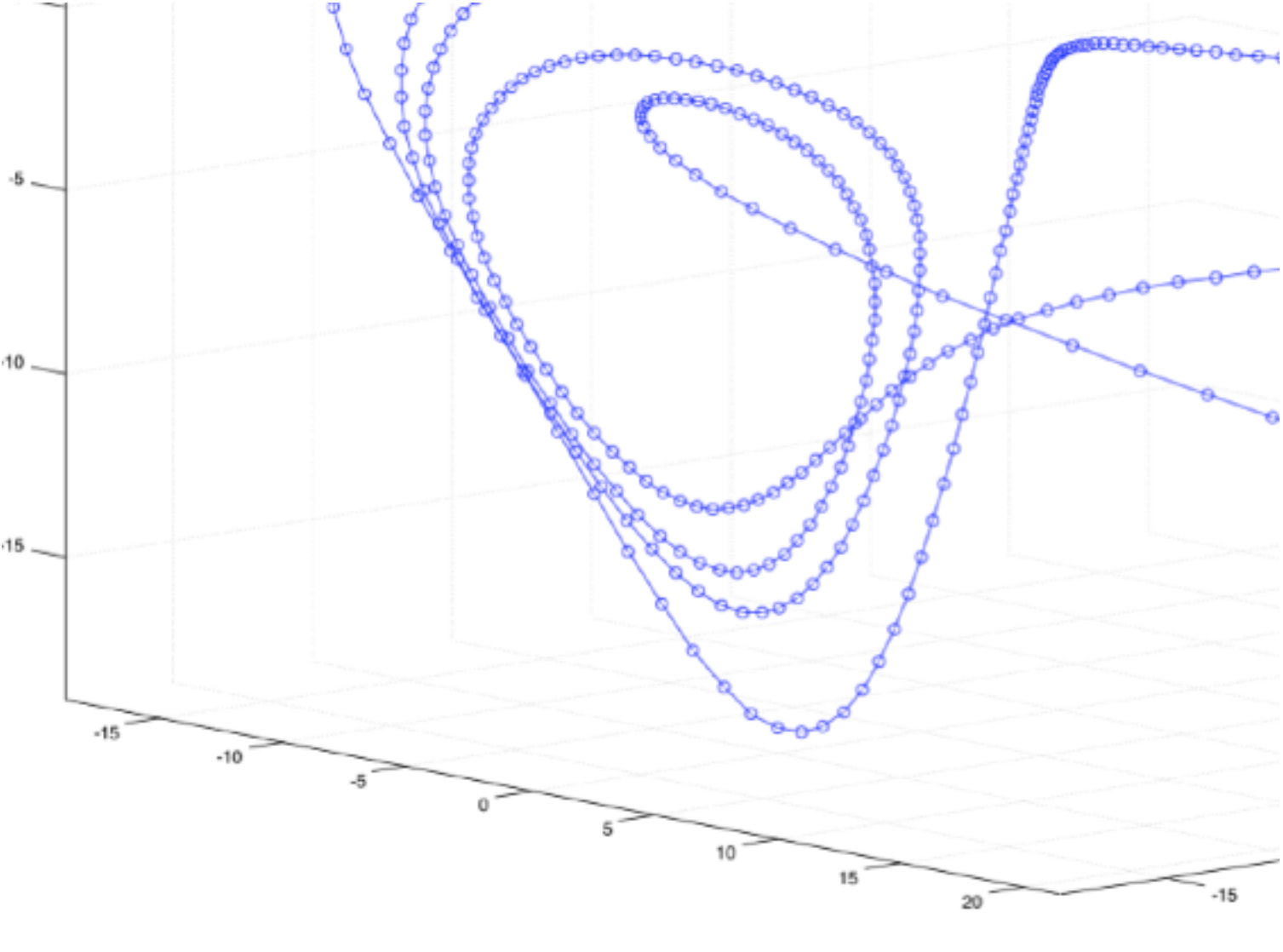

15
10
5
0
-5
-10
-15
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
time (a.u.)

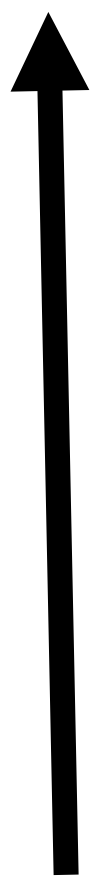

Surrogate dimensions of X - the Lorenz System
15
10
5
0
-5
-10
-15
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
time (a.u.)


X
t+τ

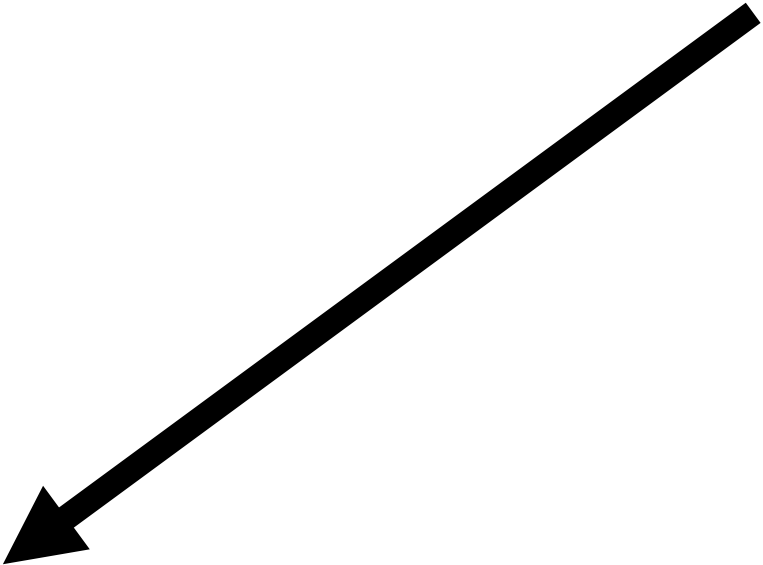

X
t+2τ


20
15
10
5
0
-5
-10
-15
20
10
0
-10
20
15
10
5
0
-5
-10
-15

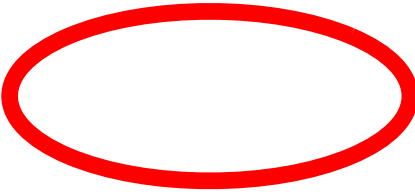

-5
-10
-15
-15
-10
-5
0
5
10
15
20
-15

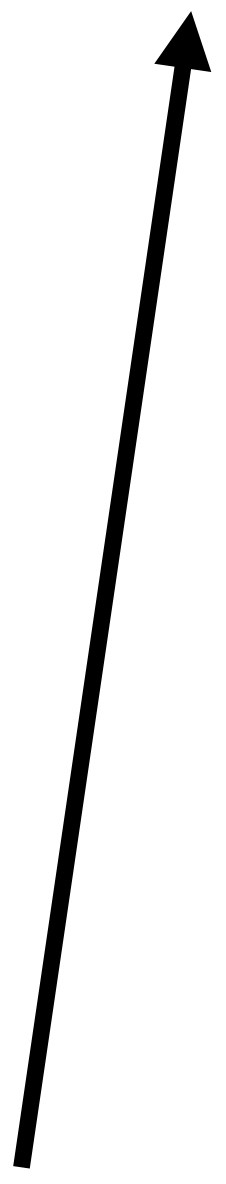


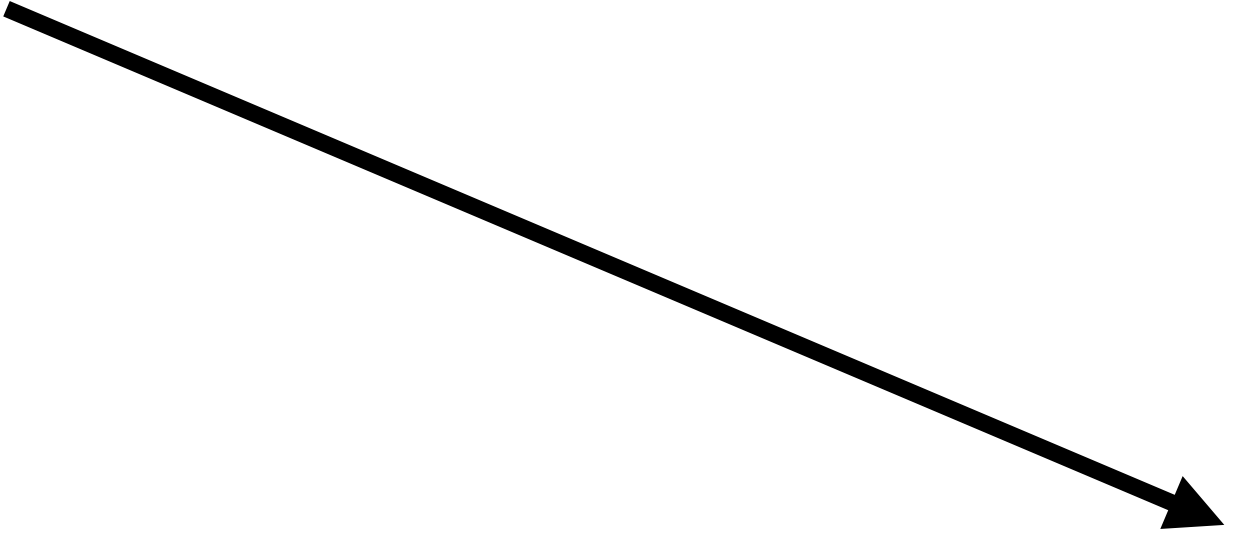
$$(X, X_{t+\tau}, X_{t+2\tau})$$



$$(X', X'_{t+\tau}, X'_{t+2\tau})$$







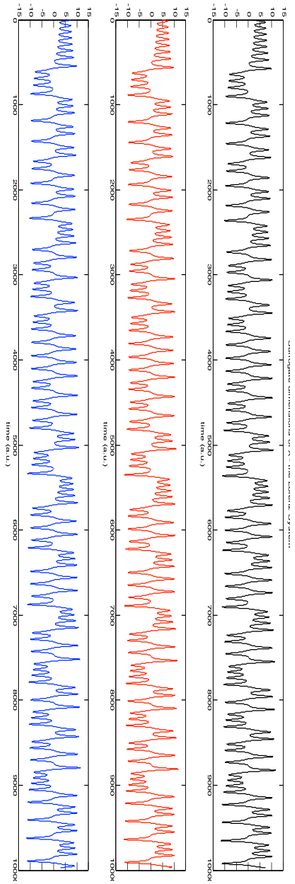
Calculate (Euclidean) distance between coordinates:

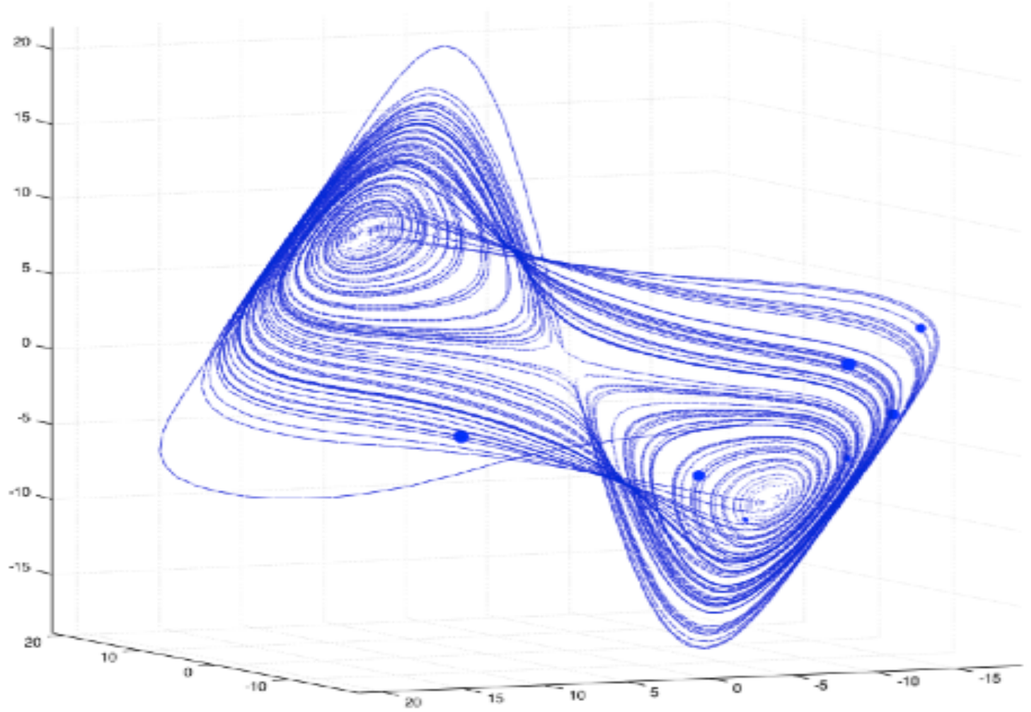
$$\text{sqrt}((X-X')^2+(X_\tau -X'_\tau)^2+(X_{2\tau} -X'_{2\tau})^2)$$

See if distance falls within a certain radius (f.i. red circle).

If it does, plot a point in RP

52

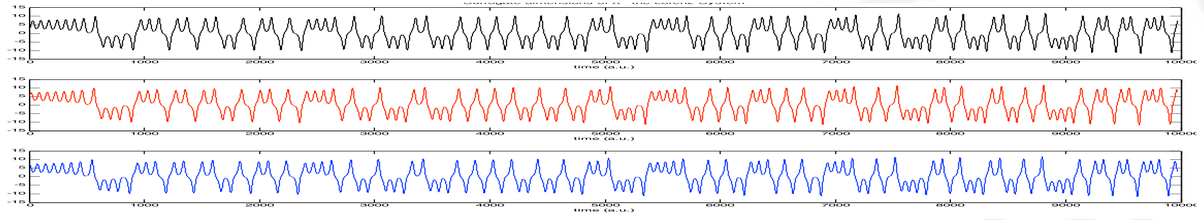


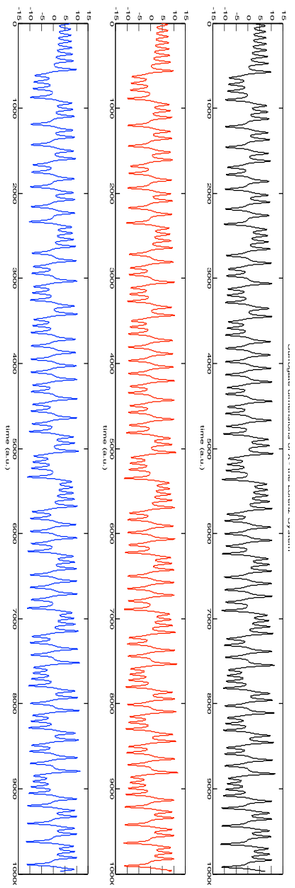


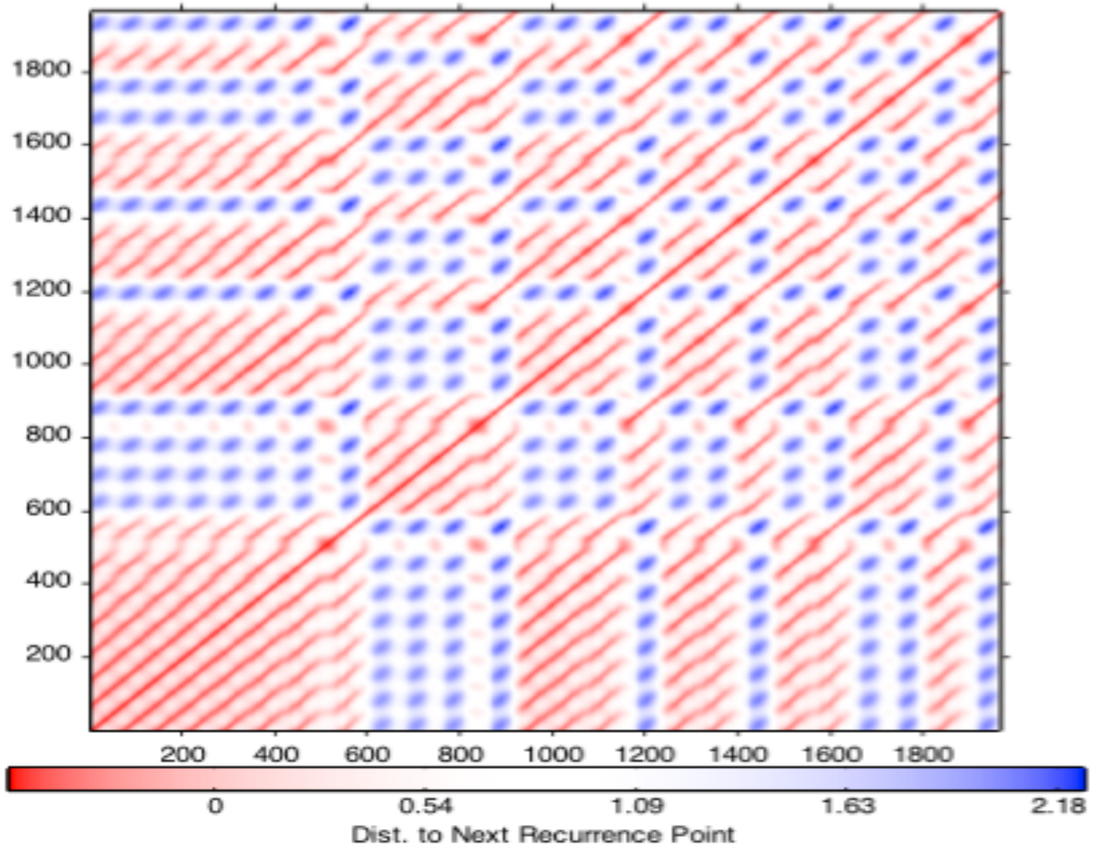
X

$X_{t+\tau}$

$X_{t+2\tau}$







X

$X_{t+\tau}$

$X_{t+2\tau}$