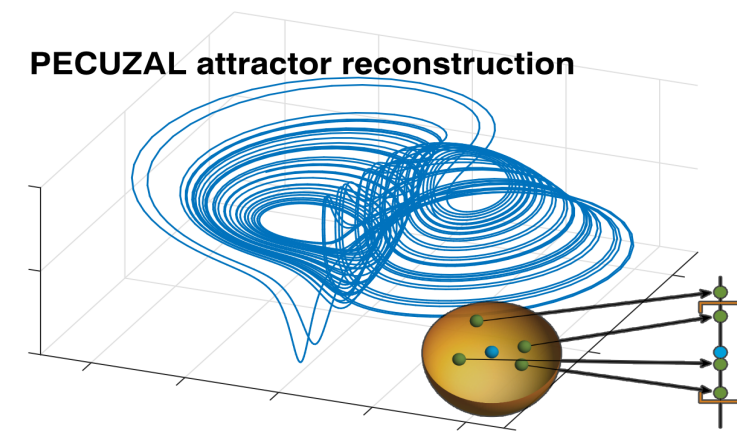




A unified and automated approach to attractor reconstruction

New Journal of Physics 23 (3) 033017

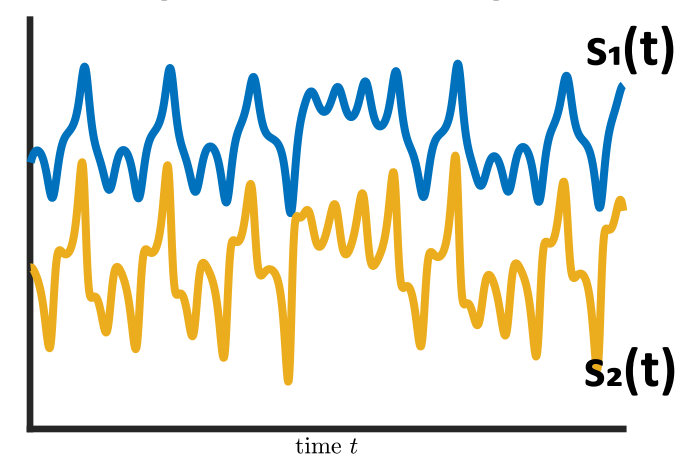
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The continuity statistic^a: A measure for functional dependence

The problem:

Available time series
(observables)



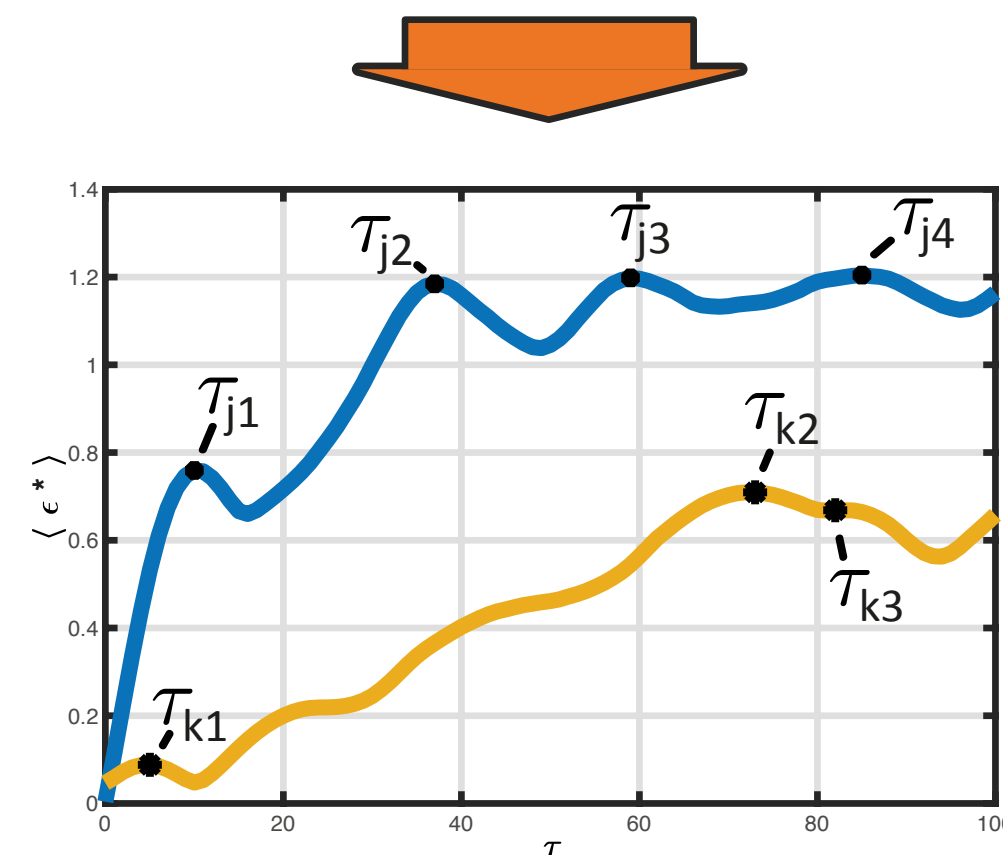
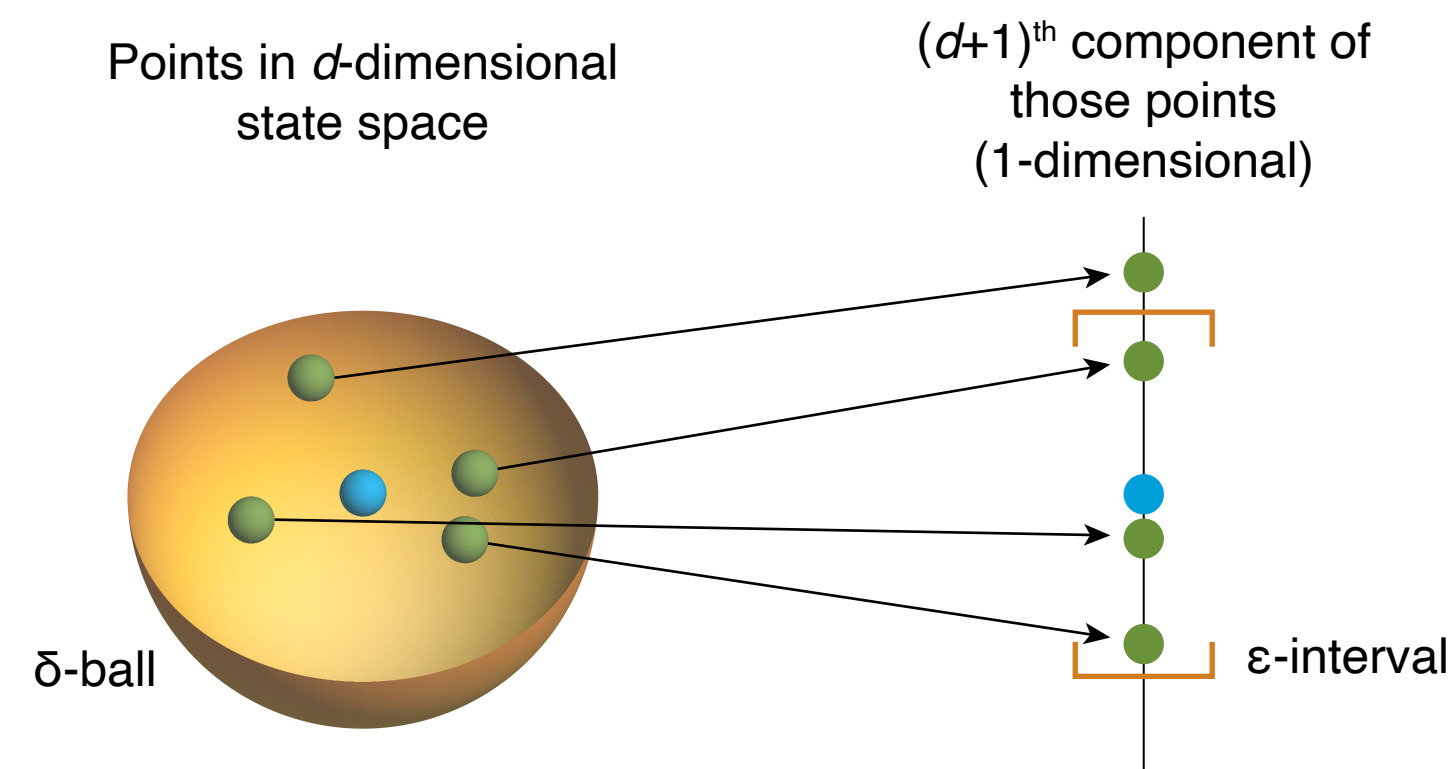
Reconstruction vectors in
embedding dimension m :

$$\vec{v}(t) = (s_{i_1}(t - \tau_1), s_{i_2}(t - \tau_2), \dots, s_{i_m}(t - \tau_m)).$$

How to make components of the re-
construction independent of each
other?

$$s_{i_{d+1}}(t + \tau_{d+1}) \stackrel{?}{=} f(s_{i_1}(t + \tau_1), s_{i_2}(t + \tau_2), \dots, s_{i_d}(t + \tau_d))$$

The solution:



Parameter dependence:

