Entropy in time series data

Sample entropy

- P = $A(k)/B(k)$
  - A: # of data segment of length m+1 are within distance < r
  - B: # of data segment of length m are within distance < r

- The negative natural logarithm of the conditional probability that a dataset of length N, having repeated itself within a tolerance r for m points, will also repeat itself for m + 1 points.

- SampEn (m, r, N) = −ln P

- SampEn: the negative natural log (-ln) of the conditional probability that the pattern of *m*+1 points (■-■-■-■) will match if a pattern of *m* points (■-■-■) did match