Consider n streams of time series describing the utilization traces of n resources, each at some (fixed) granularity. Denote the space of a time series as S

Define a function d:

$$\begin{aligned} d_{a,b} &: S^2 \to [0,1] \\ (x[a:b], y[a:b]) &\mapsto [0,1] \end{aligned} \tag{1}$$

where d maps a portion of two time series to a real number in $[0,1]$ that represents the distance between the partial time series.

Additionally, we require d to satisfy the triangle inequality:

$$d(x,y) \leq d(x,z) + d(z,y) \tag{2}$$