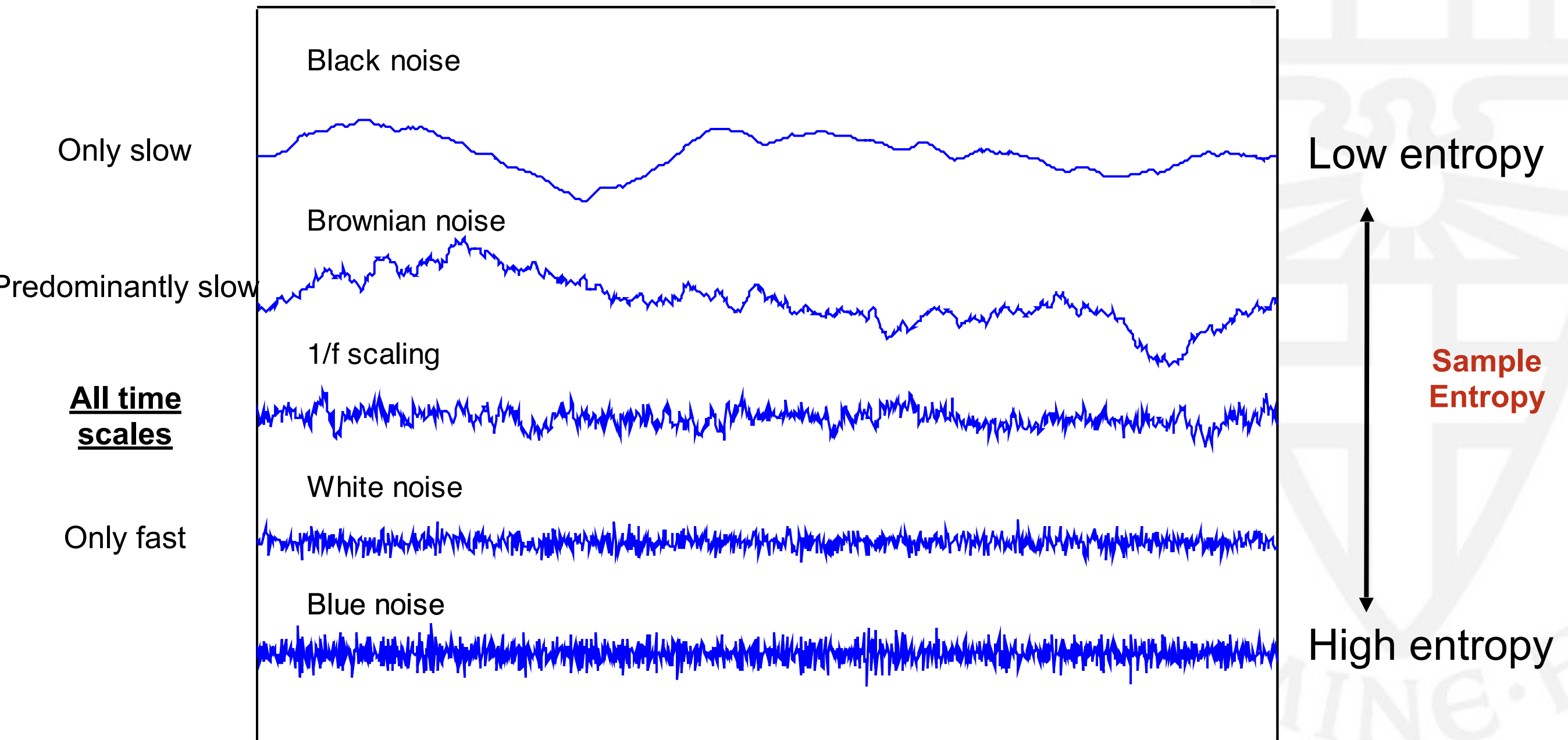


## Temporal properties of variability: Sample entropy



## 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.
- $\text{SampEn}(m, r, N) = -\ln P$