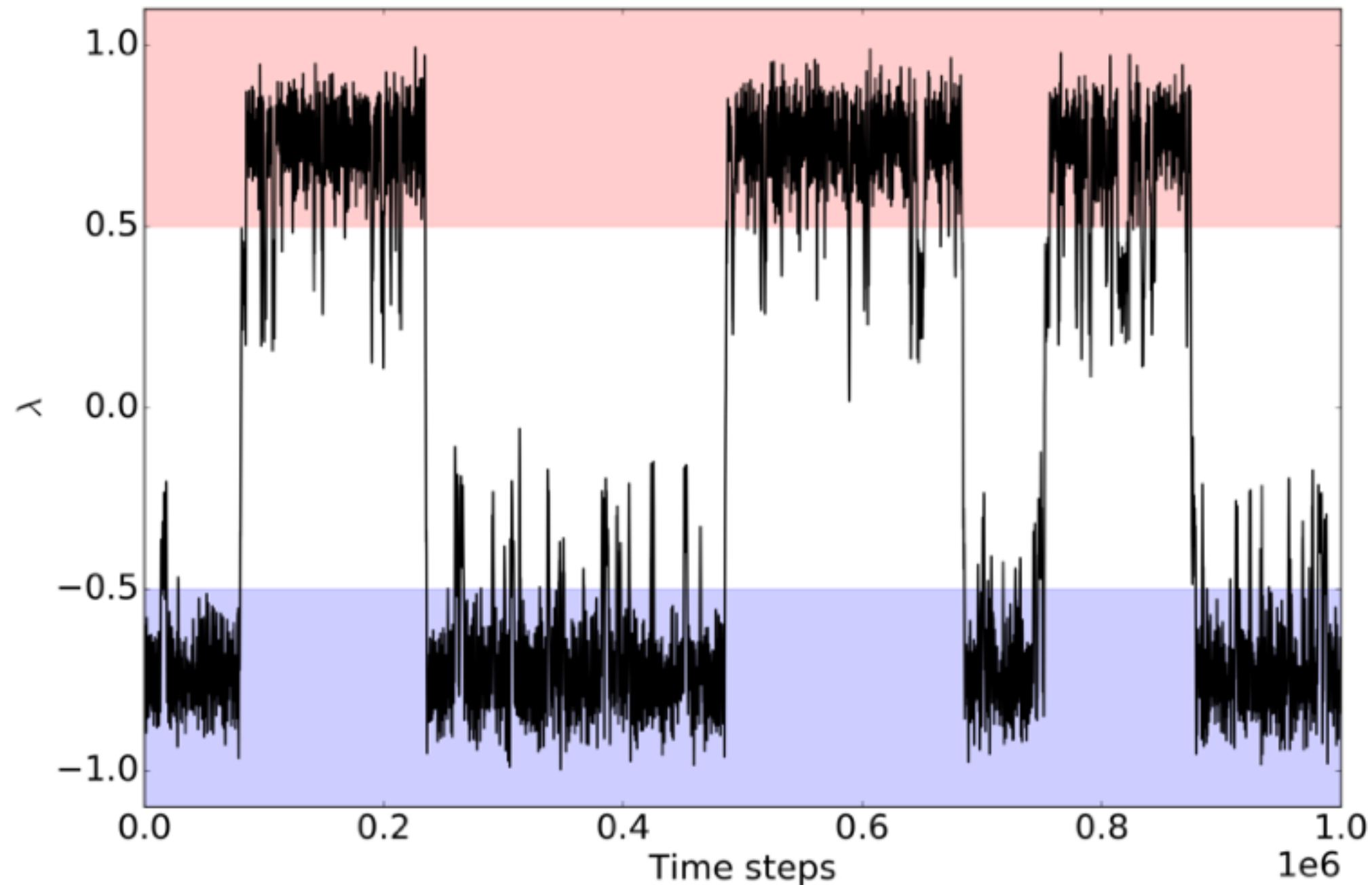


# What makes an event “rare”?



Biomolecular Systems:  $\sim 1/\text{ms}$  is common  
Requires  $10^{12}$  time steps of  $\sim 1$  fs

# RARE EVENTS

crystallization &  
self-assembly

catalysis

reactions

enzyme  
reactions

complex  
fluids

solvent effects

conformational changes

folding & binding

