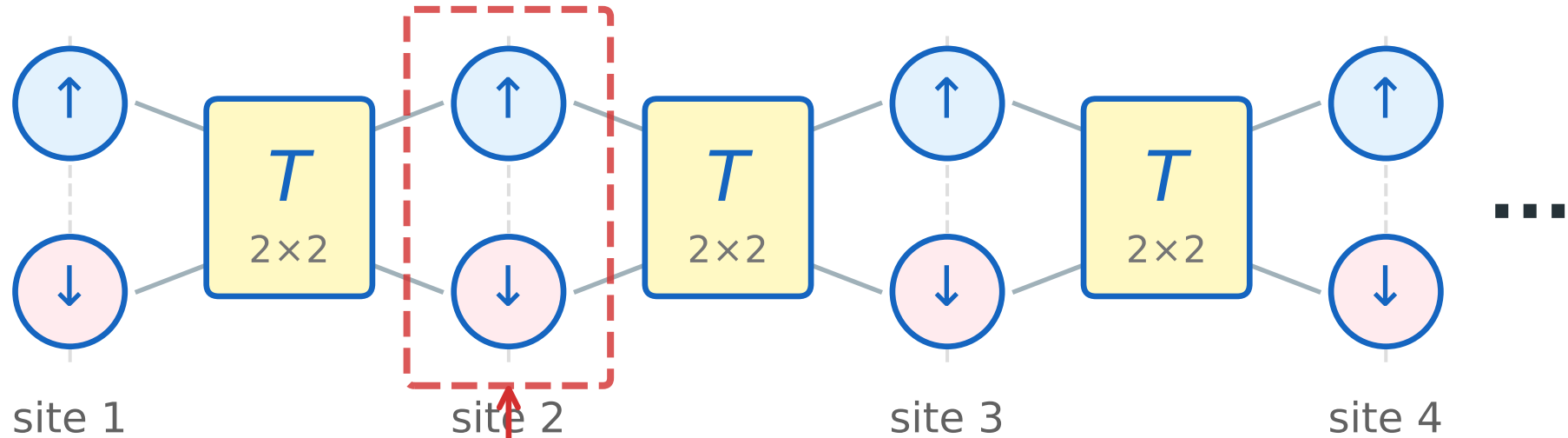


All T identical \Rightarrow commute \Rightarrow diagonalize once!



$$Z = \text{Tr}(T \cdot T \cdot T \cdots T) = \text{Tr}(T^N)$$

$f(\uparrow, \downarrow)$

$$\langle \sigma_k \rangle = \frac{\text{Tr}(T^{k-1} \cdot f \cdot T^{N-k})}{\text{Tr}(T^N)}$$