Model of distributed parallel processing

$$\alpha = \frac{Payload}{Total}$$

1993

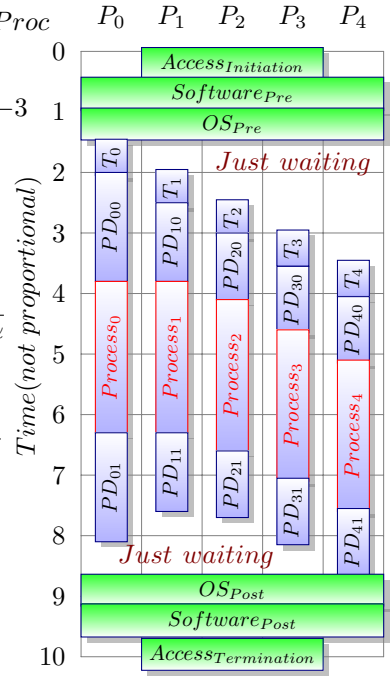
$$\alpha = 1 - 1 \cdot 10^{-3}$$

$$N_{cores} = 10^3$$

$$\frac{R_{Max}}{R_{Peak}} = \frac{1}{N \cdot (1-\alpha) + \alpha}$$

$$= \frac{1}{10^3 \cdot 10^{-3} + 1}$$

$$= 0.5$$



2018
(*Sunway/Taihulight*)

$$\alpha = 1 - 3.3 \cdot 10^{-8}$$

$$Total = 10^{13}\ clocks$$

$$N_{cores} = 1.06 \cdot 10^7$$

$$\frac{R_{Max}}{R_{Peak}} = \frac{1}{N \cdot (1-\alpha) + \alpha}$$

$$= 0.74$$