$$|\lambda| \leqslant k \Longrightarrow \overset{\lambda}{\boxtimes}\, \mathbb{C}^k = \underbrace{\overset{\complement}{k}\mathbb{C}^k}_{\lambda}$$

$$\dim \overset{\lambda}{\boxtimes}\, \mathbb{C}^k = \prod_{1 \leqslant i < j \leqslant k} \frac{\lambda_i - \lambda_j + j - i}{j - i}$$

$$\lambda = n0\cdots \Longrightarrow \overset{n}{\boxtimes}\, \mathbb{C}^k = \overset{n}{\boxtimes}\, \mathbb{C}^k$$

$$\lambda = 1^n 0\cdots = 1\cdot\cdot 10\cdot\cdot \Longrightarrow \overset{n}{\boxtimes}\, \mathbb{C}^k = \overset{1\cdots 1}{\boxtimes}\, \mathbb{C}^k$$

$$\underbrace{\overset{\mu}{\boxtimes}\mathbb{C}^k}\boxtimes\underbrace{\overset{\nu}{\boxtimes}\mathbb{C}^k} \underset{\text{Rich}}{\overset{\text{Littt}}{=}} \sum_{|\lambda| = |\mu| + |\nu|}^{\mu + \nu = \lambda} N_\lambda^{\mu\nu}\, \underbrace{\overset{\lambda}{\boxtimes}\mathbb{C}^k}$$

$$\underbrace{\overset{\mu}{\boxtimes}\mathbb{C}^k}\boxtimes\underbrace{\overset{n}{\boxtimes}\mathbb{C}^k} \underset{\text{Pieri}}{=} \sum_{|\nu| = n}^{\nu \text{ column simple}} \overset{\mu + \nu}{\boxtimes}\, \mathbb{C}^k$$

$$\underbrace{\overset{\mu}{\boxtimes}\mathbb{C}^k}\boxtimes\underbrace{\overset{n}{\boxtimes}\mathbb{C}^k} \underset{\text{Pieri}}{=} \sum_{|\nu| = n}^{\nu \text{ row simple}} \overset{\mu + \nu}{\boxtimes}\, \mathbb{C}^k$$

$$\overbrace{\underbrace{\mathbb{C}^m\boxtimes\mathbb{C}^n}\boxtimes\cdots\boxtimes\underbrace{\mathbb{C}^m\boxtimes\mathbb{C}^n}}^{d} = \sum_{|\lambda| \leqslant m \curlywedge n}^{|\lambda| = d} \overset{\lambda}{\boxtimes}\, \mathbb{C}^m \boxtimes \overset{\lambda}{\boxtimes}\, \mathbb{C}^n$$

$$\overbrace{\underbrace{\mathbb{C}^m\boxtimes\mathbb{C}^n}\boxtimes\cdots\boxtimes\underbrace{\mathbb{C}^m\boxtimes\mathbb{C}^n}}^{d} = \sum_{\lambda \subset m\times n}^{|\lambda| = d} \overset{\lambda}{\boxtimes}\, \mathbb{C}^m \boxtimes \overset{\lambda^t}{\boxtimes}\, \mathbb{C}^n$$

$$|\lambda| = d \Longrightarrow \complement|d \underset{\text{prim}}{\ltimes} \underbrace{\complement|d}_{\lambda}$$

$$\underbrace{\complement|d}_{\lambda} = \prod_{i:j}^{\lambda} \frac{k - i + j}{h_{ij}}$$

$$\underbrace{\mathsf{C}|d} \ltimes \overbrace{\mathbb{C}^k \boldsymbol{\Join} \cdots \boldsymbol{\Join} \mathbb{C}^k}^{d} \rtimes \underbrace{{}^{\mathsf{C}}_{k}\mathbb{C}^k} = \sum_{\lambda} {}^{\lambda}_{\boldsymbol{\Join}} \mathbb{C}^k \boldsymbol{\Join} \underline{\mathsf{C}|d}_{\lambda}$$