Matrici

- matrice complessa coniugata: $(M^*)_{ik} = (M_{ik})^*$
- matrice trasposta: $(M^T)_{ik} = M_{ki}$
- matrice coniugata hermitiana (aggiunta):

  $$M^\dagger = (M^T)^* = (M^*)^T, \quad (M^\dagger)_{ik} = M^*_{ki}$$

- matrice simmetrica: $A = A^T, \quad A_{ik} = A_{ki}$

  $$(A \cdot B)^T = B^T \cdot A^T$$

- matrice hermitiana (autoaggiunta):

  $$A^\dagger = A, \quad A_{ik} = A^*_{ki}$$

- $(A \cdot B)^\dagger = B^\dagger \cdot A^\dagger$
- matrice diagonale: $A = \begin{vmatrix} \alpha_1 & 0 & \dots & 0 \\ 0 & \alpha_2 & \dots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & \alpha_n \end{vmatrix}$

  N.B. $\quad A\,|\boldsymbol{\alpha}_i\rangle = \alpha_i\,|\boldsymbol{\alpha}_i\rangle$

- determinante e complemento algebrico:

  $$\det A = \sum_k A_{1k}\tilde{A}_{1k}$$

- matrice inversa: $(A^{-1})_{ik} = \dfrac{\tilde{A}_{ki}}{\det A}$

  $$AA^{-1} = A^{-1}A = \mathrm{I}$$