

1

$$|\psi\rangle = \sum_i c_i |\phi_i\rangle = \begin{pmatrix} \blacksquare \\ \square \\ \vdots \end{pmatrix} + \begin{pmatrix} \square \\ \blacksquare \\ \vdots \end{pmatrix} + \dots = \begin{pmatrix} \blacksquare \\ \blacksquare \\ \vdots \end{pmatrix}$$

ket2dm
→**2**

$$\rho = \sum_j p_j |\psi_j\rangle \langle \psi_j| = \begin{pmatrix} \color{green}\square & \color{blue}\square & \dots \\ \color{red}\square & \color{brown}\square & \\ \vdots & & \end{pmatrix}$$

dm2vec
→**3**

$$\vec{\rho} = \begin{pmatrix} \color{green}\square \\ \color{red}\square \\ \vdots \\ \color{blue}\square \\ \color{brown}\square \\ \vdots \end{pmatrix}$$

←
dm2ket←
vec2dm