

cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc
1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1
cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1
cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1

$$\hat{H} = \hat{H}_s + \hat{H}_E + \hat{H}_{SE}, \quad (1)$$

cc 1 \hat{H}_E cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc
1 $\hat{H}_s = \Omega \mathbf{h} \cdot \hat{\boldsymbol{\sigma}}$ cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1
cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1

$$\hat{H}_{SE} = \chi(t) \boldsymbol{\alpha} \cdot \hat{\boldsymbol{\sigma}} \otimes \hat{O}. \quad (2)$$

cc 1 $\mathbf{h} \cdot \hat{\boldsymbol{\sigma}}$ cc 1 $\boldsymbol{\alpha} \cdot \hat{\boldsymbol{\sigma}}$ cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 \mathbf{h} cc 1 $\boldsymbol{\alpha}$ cc 1 cc 1 cc
1 \hat{O} cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc
1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1
cc 1 $\chi(t)$ cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc
1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1
cc 1 cc 1 cc 1 χ cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1 cc 1