$$E_{C_{I}} = -(J_{I} + J_{2} + J_{I}' + J_{2}')/2 - H$$

$$H_{fr2}$$

$$H_{fr2}$$

$$H_{fr1}$$

$$E_{C_{4}}'' = -(J_{I}' - J_{2}')/2 - H/2$$

$$E_{C_{4}} = (-J_{I} + J_{2} + J_{I}' + J_{2}')/2$$

$$E_{C_{4}} = (-J_{I} + J_{2} + J_{I}' + J_{2}')/2$$

$$E_{C_{4}} = (J_{I} - J_{2} + J_{I}' + J_{2}')/2$$