$$E_{C_{I}} = -(J_{I} + J_{2} + J_{1}' + J_{2}')/2 - H$$

$$H_{fr3}$$

$$R_{I} \geqslant R_{2}$$

$$E_{C_{4}}'' = (J_{1}' - J_{2}')/2 - H/2$$

$$H_{fr2}$$

$$H_{fr2}$$

$$H_{fr2}$$

$$H_{fr2}$$

$$E_{C_{4}}''' = -(J_{1}' - J_{2}')/2 - H/2$$

$$E_{C_{3}} = (J_{I} + J_{2} + J_{1}' + J_{2}')/6 - H/3$$

$$H_{fr1}$$

$$H_{fr1}$$

$$R_{I} + R_{2} \geqslant 1 \quad (J_{1} \leqslant J_{2})$$

$$R_{I} + R_{2} \geqslant 1 \quad (J_{1} \geqslant J_{2})$$

$$R_{I} + R_{2} \geqslant 1 \quad (J_{1} \geqslant J_{2})$$

$$E_{C_{2}} = (J_{I} + J_{2} - J_{1}' - J_{2}')/2$$

$$E_{C_{4}} = (-J_{I} + J_{2} + J_{1}' + J_{2}')/2$$

$$E_{C_{4}} = (-J_{I} + J_{2} + J_{1}' + J_{2}')/2$$