Appendix A

Coefficients A_3^*, B_1^*, B_2^* in Eq. (19) are

$$A_3^* = \frac{b_{24}}{b_{14}}\left(\frac{\delta_n^2}{R_x}+\frac{\beta_m^2}{R_y}\right)-\frac{b_{34}}{b_{14}}\ ,$$

$$B_1^* = \frac{b_{13}b_{32}-b_{12}b_{33}}{b_{22}b_{33}-b_{23}b_{32}}\left[\frac{b_{24}}{b_{14}}\left(\frac{\delta_n^2}{R_x}+\frac{\beta_m^2}{R_y}\right)-\frac{b_{34}}{b_{14}}\right]+\frac{b_{32}e_{51}\delta_n-b_{33}e_{41}\beta_m}{b_{22}b_{33}-b_{23}b_{32}}K_S\ ,$$

$$B_2^* = \frac{b_{12}b_{23}-b_{13}b_{22}}{b_{22}b_{33}-b_{23}b_{32}}\left[\frac{b_{24}}{b_{14}}\left(\frac{\delta_n^2}{R_x}+\frac{\beta_m^2}{R_y}\right)-\frac{b_{34}}{b_{14}}\right]+\frac{b_{23}e_{41}\beta_m-b_{22}e_{51}\delta_n}{b_{22}b_{33}-b_{23}b_{32}}K_S \qquad \text{(A1)}$$

in which $b_{ij}\ (i=1\div 3,\ j=2\div 4)$ have the same form as in the work [67].

The detailed definitions of coefficients $a_{k6}, a_{k7}\ (k=1\div 3)$ in Eqs. (20) are

$$a_{16} = \frac{\bar{c}_1\left(1-\bar{c}_2a_{25}\right)a_{34}+\bar{c}_1\bar{c}_2a_{24}a_{35}}{\left(1-\bar{c}_1a_{14}\right)\left(1-\bar{c}_2a_{25}\right)-\bar{c}_1\bar{c}_2a_{15}a_{24}}\ ,\ a_{26} = \frac{\bar{c}_1\left(1-\bar{c}_2a_{25}\right)a_{44}+\bar{c}_1\bar{c}_2a_{24}a_{45}}{\left(1-\bar{c}_1a_{14}\right)\left(1-\bar{c}_2a_{25}\right)-\bar{c}_1\bar{c}_2a_{15}a_{24}},$$

$$a_{36} = \frac{\bar{c}_1\left(1-\bar{c}_2a_{25}\right)a_{54}+\bar{c}_1\bar{c}_2a_{24}a_{55}}{\left(1-\bar{c}_1a_{14}\right)\left(1-\bar{c}_2a_{25}\right)-\bar{c}_1\bar{c}_2a_{15}a_{24}},\ a_{17} = \frac{\left(1-\bar{c}_1a_{14}\right)\bar{c}_2a_{35}+\bar{c}_1\bar{c}_2a_{15}a_{34}}{\left(1-\bar{c}_1a_{14}\right)\left(1-\bar{c}_2a_{25}\right)-\bar{c}_1\bar{c}_2a_{15}a_{24}}\ , \qquad \text{(A2)}$$

$$a_{27} = \frac{\left(1-\bar{c}_1a_{14}\right)\bar{c}_2a_{45}+\bar{c}_1\bar{c}_2a_{15}a_{44}}{\left(1-\bar{c}_1a_{14}\right)\left(1-\bar{c}_2a_{25}\right)-\bar{c}_1\bar{c}_2a_{15}a_{24}}\ ,\ a_{37} = \frac{\left(1-\bar{c}_1a_{14}\right)\bar{c}_2a_{55}+\bar{c}_1\bar{c}_2a_{15}a_{54}}{\left(1-\bar{c}_1a_{14}\right)\left(1-\bar{c}_2a_{25}\right)-\bar{c}_1\bar{c}_2a_{15}a_{24}}$$

where

$$(\bar{c}_1,\bar{c}_2) = \frac{1}{h}(c_1,c_2)\ ,\ a_{14} = -\frac{\bar{e}_{21}}{\bar{a}_{82}}\ ,\ a_{24} = \frac{\nu_{21}\bar{e}_{11}}{\bar{a}_{82}}\ ,\ a_{44} = \frac{m^2\pi^2B_a^2}{8B_h^2}\ ,\ a_{54} = -\frac{1}{\bar{a}_{82}}\left(\bar{e}_{11T}\bar{e}_{21}-\bar{e}_{11}\bar{e}_{21T}\nu_{21}\right),$$

$$a_{34} = -\frac{4\gamma_m\gamma_n}{mn\pi^2\bar{a}_{82}}\left[\frac{\bar{A}_3^*}{B_h^2}\left(\nu_{21}\bar{e}_{11}m^2\pi^2B_a^2-\bar{e}_{21}n^2\pi^2\right)-\frac{B_a}{B_h}\bar{B}_1^*m\pi\left(\bar{e}_{11}\bar{e}_{22}\nu_{12}\nu_{21}-\bar{e}_{12}\bar{e}_{21}\right)\right.$$

$$\left.-\frac{n\pi}{B_h}\nu_{21}\bar{B}_2^*\left(\bar{e}_{11}\bar{e}_{22}-\bar{e}_{12}\bar{e}_{21}\right)\right]-4\frac{\gamma_m\gamma_nB_aR_{ax}}{mn\pi^2B_h}\ ,$$

$$a_{15}=\frac{\nu_{12}\bar{e}_{21}}{\bar{a}_{82}},\ a_{25}=-\frac{\bar{e}_{11}}{\bar{a}_{82}}\ ,\ a_{45}=\frac{n^2\pi^2}{8B_h^2}\ ,\ a_{55}=-\frac{1}{\bar{a}_{82}}\left(\bar{e}_{11}\bar{e}_{21T}-\nu_{12}\bar{e}_{21}\bar{e}_{11T}\right), \tag{A3}$$

$$a_{35}=-\frac{4\gamma_m\gamma_n}{mn\pi^2\bar{a}_{82}}\left[\frac{\bar{A}_3^*}{B_h^2}\left(\bar{e}_{21}\nu_{12}n^2\pi^2-\bar{e}_{11}m^2\pi^2B_a^2\right)-\frac{B_a}{B_h}\nu_{12}m\pi\bar{B}_1^*\left(\bar{e}_{12}\bar{e}_{21}-\bar{e}_{11}\bar{e}_{22}\right)\right.$$

$$\left.-\frac{n\pi}{B_h}\bar{B}_2^*\left(\bar{e}_{12}\bar{e}_{21}\nu_{12}\nu_{21}-\bar{e}_{11}\bar{e}_{22}\right)\right]-4\frac{\gamma_m\gamma_nR_{by}}{mn\pi^2B_h}$$

in which

$$\bar{a}_{82}=\left(1-\nu_{12}\nu_{21}\right)\bar{e}_{11}\bar{e}_{21}\ ,\ \left(\bar{e}_{11},\bar{e}_{21},\bar{e}_{11T},\bar{e}_{21T}\right)=\frac{1}{h}\left(e_{11},e_{21},e_{11T},e_{21T}\right),$$

$$\left(\bar{e}_{12},\bar{e}_{22},\bar{A}_3^*\right)=\frac{1}{h^2}\left(e_{12},e_{22},A_3^*\right),\quad\left(\bar{B}_1^*,\bar{B}_2^*\right)=\left(B_1^*,B_2^*\right)h, \tag{A4}$$

$$B_a=b/a,\ B_h=\frac{b}{h},\ R_{ax}=a/R_x,\ R_{by}=b/R_y,\ \gamma_i=\frac{1}{2}\left[1-(-1)^i\right]\ (i=m,n).$$

Appendix B

The coefficients b_l $(l=1\div6)$ in the Eqs. (22) are defined as

$$b_1=\frac{mn\pi^2}{16\gamma_m\gamma_n}a_{13}-\frac{B_a}{B_h}R_{ax}a_{16}-\frac{R_{by}}{B_h}a_{17}\ ,\ b_2=\frac{mn\pi^2}{16\gamma_m\gamma_n}a_{23}+\frac{mn\pi^4}{16\gamma_m\gamma_nB_h^2}\left(m^2B_a^2a_{16}+n^2a_{17}\right)\ ,$$

$$b_3=\frac{mn\pi^2}{16\gamma_m\gamma_n}a_{33}-\frac{1}{B_h}\left(B_aR_{ax}a_{26}+R_{by}a_{27}\right)\ ,\ b_4=\frac{mn\pi^2}{16\gamma_m\gamma_n}a_{43}+\frac{mn\pi^4}{16\gamma_m\gamma_nB_h^2}\left(m^2B_a^2a_{26}+n^2a_{27}\right),$$

$$b_5=\frac{mn\pi^4}{16\gamma_m\gamma_nB_h^2}\left(m^2B_a^2a_{36}+n^2a_{37}\right)\ ,\ b_6=\frac{B_a}{B_h}R_{ax}a_{36}+\frac{R_{by}}{B_h}a_{37} \tag{B1}$$

where

$$a_{13}=-\frac{\pi^3}{B_h^3}\left(\bar{a}_{11}\bar{B}_1^*m^3B_a^3+\bar{a}_{21}\bar{B}_1^*mn^2B_a+\bar{a}_{31}\bar{B}_2^*m^2nB_a^2+\bar{a}_{41}\bar{B}_2^*n^3\right)-\frac{\pi^4}{B_h^4}\bar{a}_{51}\bar{A}_3^*m^2n^2B_a^2$$

$$+\frac{\pi^2 B_a}{B_h^3}\bar{A}_3^*\left(n^2 R_{ax}+m^2 B_a R_{by}\right)+\frac{E_0^m}{\pi^2 B_h^2}K_1+\frac{E_0^m}{B_h^2}K_2\left(m^2 B_a^2+n^2\right),$$

$$a_{23}=-\frac{32B_a^2}{3B_h^4}\pi^2\bar{A}_3^* mn\gamma_m\gamma_n\ ,\ a_{33}=-\frac{2\gamma_m\gamma_n}{3mnB_h^3}\left(\frac{m^2B_a^3}{\bar{a}_{32}}R_{ax}+\frac{n^2R_{by}}{\bar{a}_{12}}\right)\ , \tag{B2}$$

$$a_{43}=\frac{m^2n^2\pi^4}{16B_h^4}\left(\frac{n^2}{\bar{a}_{12}m^2}+\frac{m^2B_a^4}{\bar{a}_{32}n^2}\right)$$

in which

$$\left(\bar{a}_{11},\bar{a}_{21},\bar{a}_{31},\bar{a}_{41}\right)=\frac{1}{h^3}\left(a_{11},a_{21},a_{31},a_{41}\right),\bar{a}_{51}=\frac{a_{51}}{h},$$

$$\left(\bar{a}_{12},\bar{a}_{32}\right)=\left(a_{12},a_{32}\right)h\ ,\quad \left(K_1,K_2\right)=\frac{b^2}{E_0^m h^3}\left(k_1b^2,k_2\right) \tag{B3}$$

and E_0^m is the value of E^m calculated at $T_0=300\,K$.