Erratum: Hadronic molecules [Rev. Mod. Phys. 90, 015004 (2018)]

Feng-Kun Guo, Christoph Hanhart, Ulf-G. Meißner,
Qian Wang, Qiang Zhao, and Bing-Song Zou

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The diagonal contact terms for the S-wave interaction between a pair of $j_\ell^P = 1/2^-$ and $3/2^+$ heavy and antiheavy mesons was given in Table VI of the review. However, in the construction of the C parity of the meson pairs, a phase factor was missing. Consider two mesons A and B; neither of them is a C-parity eigenstate, but their linear combinations can form C-parity eigenstates. We take the phase convention for the C-parity transformation of these two particles to be $A \overset{C}{\mapsto} \bar{A}$ and $B \overset{C}{\mapsto} \bar{B}$. The $C = \pm$ C-parity eigenstates of a flavor-neutral system consisting of a pair of mesons are then given by

$$|C = \pm\rangle = \frac{1}{\sqrt{2}}[AB \pm (-1)^{J-J_A-J_B}\bar{B}\bar{A}], \tag{1}$$

where J_A and J_B are the spins of the mesons A and B and J is the total spin of the two-body system. The phase factor $(-1)^{J-J_A-J_B}$ was missing in the review. With the corrected construction, Table VI therein has been corrected to Table I.

Given the increasing interest in studying these systems, here we also give the off-diagonal contact terms. There are three channels in each of 1^{--}, 2^{--}, 1^{-+}, and 2^{-+} sectors. We label them in each sector listed in Table I from top to bottom as 1, 2, and 3. The off-diagonal contact terms for the 1^{--} sector are then

$$\begin{aligned} V_{12} &= -\frac{1}{8\sqrt{2}}[5(F_{I2}^c + F_{I1}^d - F_{I2}^d) + F_{I1}^c], \\ V_{13} &= \frac{1}{8}\sqrt{\frac{3}{2}}(-3F_{I1}^c + F_{I2}^c - 3F_{I1}^d + 3F_{I2}^d), \\ V_{23} &= \frac{3}{16}(F_{I1}^c - 3F_{I2}^c + F_{I1}^d - F_{I2}^d). \end{aligned} \tag{2}$$

TABLE I. Diagonal contact terms for the S-wave interaction between a pair of $j_\ell^P = 1/2^-$ and $3/2^+$ heavy and antiheavy mesons.

J^{PC}	Meson pairs	Contact terms
1^{--}	$(1/\sqrt{2})(D\bar{D}_1 - D_1\bar{D})$	$(1/8)(-F_{I1}^c - 5F_{I2}^c + 3F_{I1}^d + 5F_{I2}^d)$
	$(1/\sqrt{2})(D^*\bar{D}_1 + D_1\bar{D}^*)$	$(1/16)(7F_{I1}^c - 5F_{I2}^c + 11F_{I1}^d + 5F_{I2}^d)$
	$(1/\sqrt{2})(D^*\bar{D}_2 - D_2\bar{D}^*)$	$(1/16)(-5F_{I1}^c - F_{I2}^c + 15F_{I1}^d + F_{I2}^d)$
0^{--}	$(1/\sqrt{2})(D^*\bar{D}_1 - D_1\bar{D}^*)$	$F_{I1}^c + F_{I1}^d$
2^{--}	$(1/\sqrt{2})(D\bar{D}_2 - D_2\bar{D})$	$(1/8)(3F_{I1}^c - F_{I2}^c + 3F_{I1}^d + 5F_{I2}^d)$
	$(1/\sqrt{2})(D^*\bar{D}_1 - D_1\bar{D}^*)$	$(1/16)(F_{I1}^c - 3F_{I2}^c + F_{I1}^d + 15F_{I2}^d)$
	$(1/\sqrt{2})(D^*\bar{D}_2 + D_2\bar{D}^*)$	$(1/16)(9F_{I1}^c + 5F_{I2}^c + 9F_{I1}^d + 7F_{I2}^d)$
3^{--}	$(1/\sqrt{2})(D^*\bar{D}_2 - D_2\bar{D}^*)$	$F_{I2}^d - F_{I2}^c$
0^{-+}	$(1/\sqrt{2})(D^*\bar{D}_1 + D_1\bar{D}^*)$	$F_{I1}^d - F_{I1}^c$
1^{-+}	$(1/\sqrt{2})(D\bar{D}_1 + D_1\bar{D})$	$(1/8)[5(F_{I2}^c + F_{I2}^d) + F_{I1}^c + 3F_{I1}^d]$
	$(1/\sqrt{2})(D^*\bar{D}_1 - D_1\bar{D}^*)$	$(1/16)[5(F_{I2}^c + F_{I2}^d) - 7F_{I1}^c + 11F_{I1}^d]$
	$(1/\sqrt{2})(D^*\bar{D}_2 + D_2\bar{D}^*)$	$(1/16)(5F_{I1}^c + F_{I2}^c + 15F_{I1}^d + F_{I2}^d)$
2^{-+}	$(1/\sqrt{2})(D\bar{D}_2 + D_2\bar{D})$	$(1/8)(-3F_{I1}^c + F_{I2}^c + 3F_{I1}^d + 5F_{I2}^d)$
	$(1/\sqrt{2})(D^*\bar{D}_1 + D_1\bar{D}^*)$	$(1/16)[3(F_{I2}^c + 5F_{I2}^d) - F_{I1}^c + F_{I1}^d]$
	$(1/\sqrt{2})(D^*\bar{D}_2 - D_2\bar{D}^*)$	$(1/16)(-9F_{I1}^c - 5F_{I2}^c + 9F_{I1}^d + 7F_{I2}^d)$
3^{-+}	$(1/\sqrt{2})(D^*\bar{D}_2 + D_2\bar{D}^*)$	$F_{I2}^c + F_{I2}^d$

The off-diagonal contact terms for the 2^{--} sector are

$$\begin{aligned} V_{12} &= -\frac{1}{8}\sqrt{\frac{3}{2}}(F^c_{I1} + 5F^c_{I2} + F^d_{I1} - F^d_{I2}),\\ V_{13} &= \frac{1}{8}\sqrt{\frac{3}{2}}(-3F^c_{I1} + F^c_{I2} - 3F^d_{I1} + 3F^d_{I2}),\\ V_{23} &= \frac{3}{16}(F^c_{I1} - 3F^c_{I2} + F^d_{I1} - F^d_{I2}). \end{aligned} \tag{3}$$

The off-diagonal contact terms for the 1^{-+} sector are

$$\begin{aligned} V_{12} &= \frac{1}{8\sqrt{2}}[5(F^c_{I2} - F^d_{I1} + F^d_{I2}) + F^c_{I1}],\\ V_{13} &= \frac{1}{8}\sqrt{\frac{5}{2}}(3F^c_{I1} - F^c_{I2} + F^d_{I1} - F^d_{I2}),\\ V_{23} &= -\frac{1}{16}\sqrt{5}(5F^c_{I1} + F^c_{I2} - F^d_{I1} + F^d_{I2}). \end{aligned} \tag{4}$$

The off-diagonal contact terms for the 2^{-+} sector are

$$\begin{aligned} V_{12} &= \frac{1}{8}\sqrt{\frac{3}{2}}(F^c_{I1} + 5F^c_{I2} - F^d_{I1} + F^d_{I2}),\\ V_{13} &= \frac{1}{8}\sqrt{\frac{3}{2}}(3F^c_{I1} - F^c_{I2} - 3F^d_{I1} + 3F^d_{I2}),\\ V_{23} &= -\frac{3}{16}(F^c_{I1} - 3F^c_{I2} - F^d_{I1} + F^d_{I2}). \end{aligned} \tag{5}$$