Physics Letters B 273 (1991) 549–550
North-Holland

Errata

H. Nakkagawa, A. Niégawa and H. Yokota, Leading T^3-behavior and vertex-configuration dependence of real-time thermal QCD coupling, Phys. Lett. B 244 (1990) 63.

Fig. 1 on page 65 in this paper is subject to "QCD with *six* flavors". In case of the quark–gluon plasma to be realized in the heavy ion collision at CERN and RHIC, it is better to consider at most "QCD with *three* flavors", in which case the vertical scale of the figure should be reduced by multiplying

$$\frac{7}{9}=\frac{b(n_f=6)}{b(n_f=3)}\,,\quad b=\frac{33-2n_f}{6}\,.$$

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B. Holdom, J. Terning and K. Verbeek, Chiral lagrangian from quarks with dynamical mass, Phys. Lett. B 245 (1991) 612.

The possibility of an additional term in the chiral lagrangian

$$\mathscr{L}_{12}=L_{12}\,\mathrm{Tr}(\chi^\dagger\,D^2U+\chi\,D^2U^\dagger) \tag{E1}$$

was overlooked. As was done for L_{11}, we use the model to calculate L_{12} and then use the second order equations of motion to eliminate this term in favor of other terms in the chiral lagrangian. We find

$$\begin{aligned}\mathscr{L}_{12}=&-L_{12}\,\mathrm{Tr}(D_\mu U^\dagger\, D^\mu U(U^\dagger\chi+\chi^\dagger U))\\&+L_{12}\,\mathrm{Tr}(\chi\chi^\dagger)-\tfrac{1}{2}L_{12}\,\mathrm{Tr}(U\chi^\dagger U\chi^\dagger+\chi U^\dagger\chi U^\dagger)\\&+\frac{1}{2N}L_{12}[\mathrm{Tr}(U\chi^\dagger-\chi U^\dagger)]^2\,,\end{aligned} \tag{E2}$$

where N is the number of flavors. Thus L_5, L_7, and L_8 receive additional contributions. We also correct another error in the sign of L_{11}. The additional contributions from these two mistakes partially cancel.

The current quark masses, m_u, m_d, m_s, the constituent quark mass, m, and the renormalized condensate, $\langle\bar\psi\psi\rangle_\mu$, are the five dimensionful parameters of the model. We have re-determined them with a χ^2 fit. To account for neglected higher order (p^6) terms in the derivative expansion we assume 6% theoretical errors in observables relating to strange quarks (i.e., M_K, M_η, F_K) and neglect the theoretical errors in observables relating to up and down quarks (i.e., M_π, F_π). We determine values for our model parameters by minimizing the difference between the theoretical and observed values of M_K, M_η, and F_K. More specifically we search for a minimum in χ^2 where

$$\chi^2=\left(\frac{M_K-M_{KT}}{\sigma_{M_K}}\right)^2+\left(\frac{F_K-F_{KT}}{\sigma_{F_K}}\right)+\left(\frac{M_\eta-M_{\eta T}}{\sigma_{M_\eta}}\right)^2\,, \tag{E3}$$

and the σ's are the total (combined in quadrature) experimental and theoretical errors, and the subscript T indicates the theoretical value. The physical value of F_K comes from the experimentally determined ratio $F_K/F_\pi=1.22\pm0.01$, and we use 495 MeV for M_K, which is determined by the average of $M^2_{K^0}$ and $M^2_{K^+}$ with electromagnetic effects subtracted out. The fit performed with the constraints $M_\pi=134.96$ MeV, $F_\pi=93.1$ MeV. For every choice of M_{KT} and F_{KT}, four of our model parameters $\hat m=\frac{1}{2}(m_u+m_d)$, m_s, m, and $\langle\bar\psi\psi\rangle_\mu$, and also $M_{\eta T}$ are determined. Thus we are fitting three observables (M_{KT}, F_{KT}, $M_{\eta T}$) with two free parameters (four parameters minus two constraints). Finally, the ratio of m_u to m_d is determined from the kaon mass splittings.

Once we have found the point in the space (M_{KT}, F_{KT}) corresponding to the minimum in χ^2 (which we will refer to as χ^2_{min}), we then search for a closed curve which surrounds the minimum and on which $\chi^2=\chi^2_{min}+1$. The extreme values of M_{KT} and F_{KT} on this equi-χ^2 boundary give an estimate of the total errors in these quantities. We will use the extreme values of our model parameters and predicted coupling constants on the equi-χ^2 boundary to quote estimates of the theoretical errors in these quantities as well.

The corrected results are presented in tables 1–3 for the same two self-energy functions for $\Sigma(p)_1$ and $\Sigma(p)_2$. The matching scale, μ, is determined to be 674 and 607 MeV respectively. F_0 is the decay constant at leading order in chiral perturbation theory.

Table 1

$(\times 10^{-3})$	GL	$\Sigma(p)_1$	$\Sigma(p)_2$
L_4	0 ± 0.5	0.16	0.08
L_5	2.2 ± 0.5	$1.94^{+0.62}_{-0.34}$	$1.88^{+0.64}_{-0.41}$
L_6	0 ± 0.3	0.10	0.05
L_7	-0.4 ± 0.15	$-0.20^{+0.11}_{-0.19}$	$-0.22^{+0.12}_{-0.20}$
L_8	1.1 ± 0.3	$0.64^{+0.47}_{-0.27}$	$0.64^{+0.47}_{-0.31}$

Table 2

	m_u [MeV]	m_d [MeV]	m_s [MeV]	m [MeV]	$\lvert\langle\bar{\psi}\psi\rangle_\mu^{1/3}\rvert$ [MeV]
$\Sigma(p)_1$	$2.8^{+2.3}_{-1.7}$	$7.7^{+2.3}_{-1.2}$	174^{+38}_{-25}	332^{+1}_{-3}	226^{+23}_{-26}
$\Sigma(p)_2$	$2.7^{+2.0}_{-1.6}$	$7.3^{+2.1}_{-1.3}$	164^{+35}_{-28}	298^{+2}_{-2}	236^{+25}_{-26}

Table 3

	χ^2_{min}	F_{KT}/F_π	M_{KT} [MeV]	F_0 [MeV]
$\Sigma(p)_1$	0.95	$1.27^{+0.05}_{-0.03}$	501^{+22}_{-23}	$81.4^{+0.3}_{-0.6}$
$\Sigma(p)_2$	0.92	$1.26^{+0.05}_{-0.04}$	502^{+22}_{-22}	$83.7^{+0.4}_{-0.6}$

The errors in L_4 and L_6 are insignificant, since L_4 and L_6 vanish at the matching scale, and the errors are only logarithmically sensitive to the uncertainty in the matching scale. The coupling constants L_1, L_2, L_3, L_9, and L_{10} remain the same up to small renormalization effects. Note that in an improved formulation of the model [1] the results in these tables remain the same, but L_1, L_2, L_3, and L_9 are modified.

[1] B. Holdom, University of Nagoya preprint DPNU-91-34.

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OPAL Collaboration, G. Alexander et al., Measurement of branching ratios and τ polarization from $\tau\to e\nu\bar{\nu}$, $\tau\to\mu\nu\bar{\nu}$, and $\tau\to\pi(K)\nu$ decays at LEP, Phys. Lett. B 266 (1991) 201.

On pages 208–210, figs. 2–4, the captions to these figures were wrongly associated. This was an error in the typesetting of this paper. The figures appear in the correct order and with the correct figure numbers, but the true caption 2 has been placed below fig. 4, the true caption 3 below fig. 2, and the true caption 4 below fig. 3.

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A. Brignole, J. Ellis, G. Ridolfi and F. Zwirner, The supersymmetric charged Higgs boson mass and LEP phenomenology, Phys. Lett. B 271 (1991) 123.

Due to a coding error in our graphical computer program, fig. 2 on page 129 was incorrectly drawn. We give here its corrected version. We thank P. Chankowski for drawing our attention to this point.

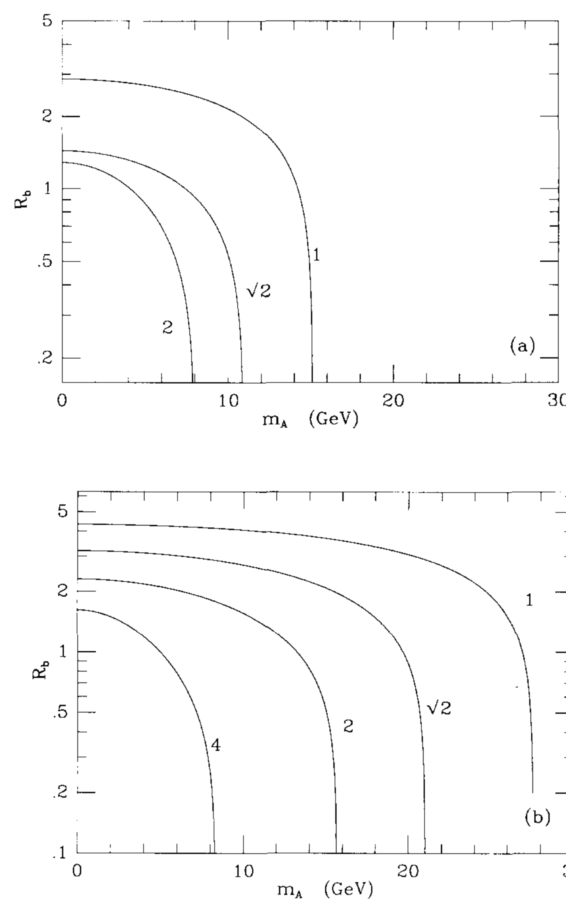

Fig. 2. The ratios $R_b \equiv \Gamma(h\to AA)/\Gamma(h\to b\bar{b})$ (upper panel) and $R_\tau \equiv \Gamma(h\to AA)/\Gamma(h\to\tau^-\tau^-)$ (lower part), as functions of m_A, for fixed values of $\tan\beta = 1, \sqrt{2}, 2, 4, m_t/m_b$. The radiative correction (25) to the hAA vertex has been included, and two different choices of parameters have been made: (a) $m_t = 120$ GeV, $m_{\tilde{q}} = 300$ GeV, $A_t = A_b = \mu = 0$; (b) $m_t = 160$ GeV, $m_{\tilde{q}} = 1$ TeV, $A_t = A_b = \mu = 0$. We have restricted the parameter space to those values for which the decays involved in the ratios R_b and R_τ are kinematically allowed.

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