Erratum: The interaction between Z and $\gamma\gamma^*$ and the $Z\to\gamma\Psi$ and $Z\to\gamma\Upsilon$ decays [Sov. Physics—JETP 74, 913–917 (June 1992)]

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In the numerical calculations of the sum rules for the first derivative of the amplitude in Sec. 3.2 a factor of $1/\pi$ was omitted in the expression for D_q [see Eq. (23)]. This makes little difference in (39) and (40), the right-hand sides of which increase by approximately 20%. But the results in Eqs. (41), (42), (45), and (46) increase by a factor of π^2. The correct results are as follows:

$$\min\sum BR(Z\to\gamma\Psi)=3{,}7\cdot10^{-6},\quad BR(Z\to\gamma J/\Psi)=1{,}3\cdot10^{-6}; \tag{41}$$

$$\min\sum BR(Z\to\gamma\Upsilon)=8{,}7\cdot10^{-5},\quad BR(Z\to\gamma\Upsilon(1S))=5{,}6\cdot10^{-5}; \tag{42}$$

$$\min\{\min\sum BR(Z\to\gamma\Psi)\}=10^{-7},\quad BR(Z\to\gamma J/\Psi)=7\cdot10^{-8}; \tag{45}$$

$$\min\{\min\sum BR(Z\to\gamma\Upsilon)\}=4{,}4\cdot10^{-7},\quad BR(Z\to\gamma\Upsilon(1S))=2\cdot10^{-7}. \tag{46}$$

Thus, in the worst case [Eqs. (45) and (46)] the predictions of the dispersion analysis are consistent with those of the quark model.[9]

The result of (47) increases by a factor of π. The correct version is

$$T_c(Res)=d/g\cdot D_c=0{,}14\ ReT_c,\qquad T_b(Res)=d/g\cdot D_b=0{,}25\ ReT_b. \tag{47}$$

These changes mean that it would be more nearly correct to formulate the conclusion (and the abstract) as follows: A study of the sum rules for the amplitude and its derivative shows that the estimates $BR(Z\to\gamma J/\Psi)\sim10^{-5}$ and $BR(Z\to\gamma\Upsilon(1S))\sim10^{-5}$, which are larger by two orders of magnitude than those expected in the quark model, can not be ruled out.

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