TABLE VIII: The order of magnitude upper bounds on $(\delta^{d,u}_{ij})_{LL,RR}$ and $\langle\delta^{d,u}_{ij}\rangle$ for $r/r_3 \lesssim 1.2\cdot 10^{-7}$, obeying the bound of Eq. (5.14) for $\tan\beta = 3$. Entries in parentheses are independent of r, therefore representing estimates rather than upper bounds.

q ij	$(\delta^q_{ij})_{LL}$	$(\delta^q_{ij})_{RR}$	$\langle\delta^q_{ij}\rangle$
d 12	$[10^{-4}(3/r_3)]$	$1.2\cdot 10^{-7}$	$4\cdot 10^{-6}\sqrt{3/r_3}$
d 13	$[0.003(3/r_3)]$	$1.2\cdot 10^{-7}$	$2\cdot 10^{-5}\sqrt{3/r_3}$
d 23	$[0.01(3/r_3)]$	$1.2\cdot 10^{-7}$	$4\cdot 10^{-5}\sqrt{3/r_3}$
u 12	$10^{-7}\max\{4.8/r_3, 1.2\}$	$1.2\cdot 10^{-7}$	$10^{-7}\max\{1.4\sqrt{3/r_3}, 1.2\}$
u 13	$[4\cdot 10^{-6}(3/r_3)]$	$1.2\cdot 10^{-7}$	$7\cdot 10^{-7}\sqrt{3/r_3}$
u 23	$[4\cdot 10^{-5}(3/r_3)]$	$1.2\cdot 10^{-7}$	$2\cdot 10^{-6}\sqrt{3/r_3}$

The largest possible contributions to the $B_{d,s}$ mixing amplitudes come from the MFV contributions to the $(\delta^d_{i3})_{LL}$'s. Therefore, the effect is not enhanced for large $\tan\beta$.

We conclude that, for anarchical gravity-mediated contributions to the A-terms, the effects on FCNC processes are negligibly small. In contrast, any improvements in the neutron EDM measurements may either further strengthen the constraints on this framework or discover its effects.

C. Yukawa-like A-terms

Here we explore the implications of A-terms of Yukawa-like texture as in the models with a FN symmetry discussed in Section IV A, specifically, Eq. (4.7), and

$$(X_{q_A})_{ij} = \mathcal{O}(1), \quad (Z_{A_q})_{ij} \sim Y^q_{ij} \sim V_{ij} m_{q_j}/v_q. \tag{5.21}$$

As concerns the $\delta^q_{LL,RR}$ parameters, the effect of such A-terms can be described as $\mathcal{O}(r)$ changes in the RGE coefficients c_u, c_d, c_{uR}, c_{dR} defined in Eq. (A2); see Eqs. (A6) and (A7). This leads, in turn, to at most $\mathcal{O}(1)$ changes in the X_{q_A} matrices. Therefore, the estimates for the $(\delta^q_{ij})_{LL,RR}$ parameters in this scenario vary by at most $\mathcal{O}(1)$ from the estimates obtained in Section V A for $Z_{A_q} = 0$ at the high scale.

As concerns the δ^q_{LR} parameters, the parametric suppression of $\widetilde{A}^q_{ij}$ can be extracted from