Erratum:

Casimir torque on two rotating plates

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In page 9, there is a term missing in Eq. (36) and should be corrected as shown in the following,

$$\begin{aligned}
 M_1(V_{d1d2}) = & \frac{k_e \hbar}{2\pi} \int_0^\infty d\omega \left\{ \left(\frac{4}{r^6} + \frac{9}{r^{10}} x_{1\perp}^2 x_{2\perp}^2 \right) \right. \\
 & \times [[n_1(\omega_+) - n_2(\tilde{\omega}_+)] \text{Im}\{\alpha_{1\perp}(\omega_+)\} \text{Im}\{\alpha_{2\perp}(\tilde{\omega}_+)\} \\
 & - [n_1(\omega_-) - n_2(\tilde{\omega}_-)] \text{Im}\{\alpha_{1\perp}(\omega_-)\} \text{Im}\{\alpha_{2\perp}(\tilde{\omega}_-)\}] \\
 & + \frac{9}{r^{10}} x_{1\perp}^2 x_{2\perp}^2 [[n_1(\omega_+) - n_2(\tilde{\omega}_-)] \text{Im}\{\alpha_{1\perp}(\omega_+)\} \text{Im}\{\alpha_{2\perp}(\tilde{\omega}_-)\}] \\
 & \left. + \frac{36}{r^{10}} x_{1\perp}^2 z_2^2 [[n_1(\omega_+) - n_2(\omega)] \text{Im}\{\alpha_{1\perp}(\omega_+)\} \text{Im}\{\alpha_{2\parallel}(\omega)\}] \right\}. \quad (1)
 \end{aligned}$$

Such a correction may change one of my original conclusions. With the missing term included, a temperature “induced” torque due to the difference in temperature on two non-rotating plates does not exist.

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