I appreciate the author's thoughtful and courteous response. However, the issue of "treating g_q as zero" still troubles me. g_q is determined by the chosen representation matrices (3) for u and v, and choosing it to be zero is an arbitrary deviation from these forms. If we can simply treat g_q as zero, why not also simply treat f_q as zero and not bother with setting $e^{ik_x} = -\frac{b}{c'} Q^{-1/2}$?

More pragmatically, the goal of making the "Wilson loop" term in the expression for $\det(1 - zH_{\text{sq}})$ vanish seems a bit pointless: as is stated in the middle of page 6, only traces **Tr** up to $q - 1$ power can be reproduced faithfully by ordinary traces of H_2, and the spurious term appears in the trace of H_2^q.

Altogether, the author could perhaps less confusingly state that the matrix H_2 is chosen to agree with H_{sq} but with the two corner elements removed, and that such a matrix faithfully reproduces the traces **Tr** and corresponding walks up to $q - 1$ steps; or even stay with the original matrix H_{sq}, since it also gives the same results up to $q - 1$ steps.

The above is only a minor point, and is only relevant to the clarity of the paper. The author can deal with it in any reasonable way, or not at all. The paper can be published, and I don't need to see the final version.