A list of changes from v1 to v2

to the preprint `arXiv:2411.03954`

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Below is a list of changes from v1 to v2 to the preprint with arXiv identifier `arXiv:2411.03954`.

- Page 3, removed the sentence "This has been the subject of several studies."

- Beginning of Section 2: We have made the distinction of thermodynamic limit and infinite degrees of freedom.

- Page 6, added sentence on further details on the scaling hypothesis and reference.

- Page 5, thus affecting "thus affecting the ratio of the gap ratios" to "thus affecting the ratio of the gaps"

- Beginning of Section 2.1: Added a paragraph on introduction on the transfer matrix and motivation of studying MPS TMs.

- Fig 2 description: symmetry-broken to non-conserving

- Figure 3(b): x-axis label changed from $L/\xi_0 \chi^\kappa$ to $L/\xi(\chi)$, label for dashed green line changed from $L^{15/4}$ to $(L/\xi)^{15/4}$

- Below Eq. (13) and describing Fig. 3(a) correction of quantity explained from "this relation is shown" (i.e. δE_0) to "$E_0 - \epsilon L$" and in the sentence referencing Fig. 3(a), a clarification and definition of ϵ_0

- Page 12. This result aligns with our numerical observations shown in Fig. 3(b) [added:] when replacing the renormalization scale L with $L/\xi(\chi)$, being the relevant length scale in the crossover regime from finite-size to finite-entanglement scaling.

- Below Eq. (34) add spontaneous: However, in the spontaneous symmetry-breaking phase (SSB), the quasi-particle excitations are domain walls. Add also sentence and reference to algebraic Bethe ansatz with its analytical solutions.

- On page 13, changed "transitionally" into "translationally".

- Typo in the caption of Fig 6, $1 - 1/\xi$ instead of $1 - 1/L$.

- Page 21, added clarification below Eq. (40) on the confinement of the theory

- Page 17, Eqs. (34) and (35), added expression in terms of the perturbation δ.

- Page 17, define acronym SSB as "spontaneous symmetry-breaking phase"

- Page 18, adding further clarification for why the SSB phase is selected by iDMRG.

- On page 22, added subclause specifying that the relevant operator is rendered marginal in combination with its scale dependent coupling (twice)

- Right before A.11, corrected $|\psi\rangle$ to be $|\psi_0\rangle$, and e to e_0.

- Below (B.1) updated the self-duality mapping to the correct one from the original reference.

- Below Eq. (34): moved the sentence from before Eq. (35) about the two elementary excitations needed to create any correlation

- Several minor orthographic corrections