



## Erratum to: RG-stable parameter relations of a scalar field theory in absence of a symmetry

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1. In Eq. (3.13), there was an error in the second of the three equalities. The corrected version of Eq. (3.13) is

$$M_{11}^2 = M_{22}^2, \quad \text{Re } M_{12}^2 = 0, \quad M_{11}^2 = -M_{22}^2, \quad (3.13)$$

2. In light of the corrected version of Eq. (3.13), the sentence following Eq. (3.16) should then read:

This leaves us with six independent squared-mass parameters and 19 independent quartic coupling parameters.

and the first line of Eq. (3.17) should read:

$$V_C = M^2 \left( |\Phi_1|^2 + |\Phi_2|^2 \right) + i \text{Im } M_{12}^2 (\Phi_1^* \Phi_2 - \Phi_1 \Phi_2^*) \\ + [\bar{M}^2 (\Phi_1^2 - \Phi_2^2) + M_{12}^2 \Phi_1 \Phi_2 + \text{c.c.}]$$

3. Immediately following Eq. (3.17), the following phrase should be added:

where  $M^2 \equiv M_{11}^2 = M_{22}^2$  and  $\bar{M}^2 \equiv M_{11}^2 = -M_{22}^2$ .

4. Immediately following Eq. (3.18) the text should be modified to read:

so that all scalar potential coefficients are real. It then follows that  $M_{12}^2 = 0$ , which finally leaves us with three independent real squared-mass parameters ( $M^2$ ,  $\bar{M}^2$ , and  $M_{12}^2$ )

and 11 independent real quartic coupling parameters ( $\Lambda_i$  for  $i = 1, 2, \dots, 11$ ) that govern the complexification of the toy model of Sect. 2.

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