Erratum: General relations between the power, efficiency, and dissipation for the irreversible heat engines in the nonlinear response regime [Phys. Rev. E 97, 012141 (2018)]

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(Received 21 August 2019; published 3 September 2019)

DOI: [10.1103/PhysRevE.100.039901](https://doi.org/10.1103/PhysRevE.100.039901)

We would like to point out a few of the equations related to minimum Dissipation (mD) were incorrect in the published version of the paper. However, these errors do not affect the main results of the article. The corrected equations and the corresponding Figs. 3 and 5 are given below:

FIG. 3. The efficiency at maximum power (MP) [obtained from Eq. (28)] is plotted as a function of the minimum dissipation for different values of $\gamma = 0.1$ for the dotted curve, $\gamma = 0.5$ for the dashed curve, and $\gamma = 0.9$ for the solid curve. Here we set $\eta_C = 0.5$, $\eta_{ME} = 0.45$, $P_{MP} = 0.5$, and $P_{ME} = 0.1$ (where ME stands for maximum efficiency).

FIG. 5. The efficiency at maximum power from Eq. (32) is plotted as a function of the dissipation for different values of γ , where we have $\gamma = 0.1$ for the dotted curve, $\gamma = 0.5$ for the dashed curve, and $\gamma = 0.9$ for the solid curve. Here we set $\eta_C = 1$ and $P_{MP} = 1$.

$$T\dot{S}_{mD} = \left(\frac{\eta_C}{\eta_{MP}} - \frac{\eta_C^2}{\eta_{ME}^2} - 1 \right) P_{MP} + \frac{\eta_C^2}{\eta_{ME}^2} P_{ME}. \quad (8)$$

$$P_{mD} = 0, \quad T\dot{S}_{mD} = P_{MP} \left(\frac{\eta_C}{\eta_{MP}} - 2 \right). \quad (12)$$

$$J_3 = \frac{L_{21} - L_{12}\eta_C}{L_{11}} J_1 + \frac{\mathcal{D}}{L_{11}} X_2 + \gamma_C J_1^2. \quad (17)$$

$$\dot{S}_{mD} = - \frac{[L_{12}^2 + L_{21}^2 + 4\gamma\eta_C\mathcal{D} - 4\mathcal{D} - 2L_{12}L_{21}]}{4L_{11}(1 - \gamma\eta_C)} X_2^2. \quad (25)$$

$$P_{mD} = \eta_C \frac{(L_{12} - L_{21})[L_{12}(1 - 2\gamma\eta_C) + L_{21}]}{4L_{11}(1 - \gamma\eta_C)^2} X_2. \quad (26)$$

$$P_{mD} = 0, \quad T_c\dot{S}_{mD} = \left(\frac{\eta_C}{\eta_{MP}} - 2 + \gamma\eta_C \right) P_{MP}. \quad (32)$$

$$(T_c\dot{S}_{mD})^- = \left(\frac{\eta_C}{\eta_{MP}} - \frac{\eta_C^2}{\eta_{ME}^2} - 1 \right) P_{MP} + \frac{\eta_C^2}{\eta_{ME}^2} P_{ME}. \quad (34)$$

$$P_{mD} = 0, \quad (T_c\dot{S}_{mD})^- = P_{MP} \left(\frac{\eta_C}{\eta_{MP}} - 2 \right). \quad (38)$$

$$P_{mD} = 0, \quad (T_c\dot{S}_{mD})^+ = P_{MP} \left(\frac{\eta_C}{\eta_{MP}} - 2 + \eta_C \right). \quad (44)$$

$$P_{mD} = 0, \quad (T_c\dot{S}_{mD})^{\text{sym}} = P_{MP} \left(\frac{\eta_C}{\eta_{MP}} - 2 + \frac{\eta_C}{2} \right). \quad (50)$$

Furthermore, the minimum dissipation relations Eqs. (28), (40), and (46) should be read as

$$T_c\dot{S}_{mD} = \left[\frac{\eta_C}{(1 - \gamma\eta_C)\eta_{MP}} - \frac{\eta_C^2}{(1 - \gamma\eta_C)\eta_{ME}^2} - 1 \right] P_{MP} + \frac{(1 - \gamma\eta_{ME})}{(1 - \gamma\eta_C)} \frac{\eta_C^2}{\eta_{ME}^2} P_{ME}. \quad (28)$$

$$(T_c\dot{S}_{mD})^+ = \frac{1}{(1 - \eta_C)} \left(\frac{\eta_C}{\eta_{MP}} - \frac{\eta_C^2}{\eta_{ME}^2} - 1 + \eta_C \right) P_{MP} + \frac{(1 - \eta_{ME})}{(1 - \eta_C)} \frac{\eta_C^2}{\eta_{ME}^2} P_{ME}. \quad (40)$$

$$(T_c\dot{S}_{mD})^{\text{sym}} = \left[\frac{2\eta_C}{(2 - \eta_C)\eta_{MP}} - \frac{2\eta_C^2}{(2 - \eta_C)\eta_{ME}^2} - 1 \right] P_{MP} + \frac{(2 - \eta_{ME})}{(2 - \eta_C)} \frac{\eta_C^2}{\eta_{ME}^2} P_{ME}. \quad (46)$$