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Abstract

Some errors exist in the above paper.

1. In a Physics equation all terms must have the same units. Taking into account this principle from the angular momentum equation (7) in [1] it is found that the units of parameter \( j \) are \( m^2 \) and the units of parameter \( \gamma \) are \( \text{kg} \text{ m} \text{s}^{-1} \).

However in Nomenclature in [1] it is written that the units of \( j \) are \( m^{-1} \).

2. In Nomenclature in [1] it is written that the units of \( \gamma \) are \( \text{kg} \text{ m}^{-1} \text{s}^{-1} \).

3. The dimensionless parameter \( I \) in equation (10) in [1] is as follows

\[
I = \frac{\nu^2 \text{Re}}{U^2} \frac{U^2}{c_p(T - T_e)}
\]

where \( \nu \) (\( m^2 \text{ s}^{-1} \)) is the fluid kinematic viscosity, \( \text{Re} \) (dimensionless) is the Reynolds number, \( U \) (\( m \text{ s}^{-1} \)) is the free stream velocity, \( c_p \) (\( m^2 \text{ s}^{-2} \text{ Kelvin}^{-1} \)) is the fluid specific heat and \( T \) (Kelvin) is the fluid temperature. From equation (1) it is found that the units of \( I \) are \( s^{-1} \). Therefore the equation (1) is wrong.

4. In section HAM results and discussion in [1] the parameter \( I \) is written as follows

\[
I = \frac{\nu^2 \text{Re}}{U^2} \frac{U^2}{c_p(T - T_e)}
\]

5. The dimensionless similarity variable \( \eta \) in equation (10) in [1] is as follows

\[
\eta = \left( \frac{(m + 1)U}{2\nu x} \right)^{1/2}
\]

where \( x \), \( y(m) \) are the Cartesian coordinates. From equation (3) it is found that the units of \( \eta \) are \( m^{1/2} \). This means that the equation (3) is wrong.

6. In equation (2) in [1] the units of the term \( \kappa \nabla \times V \) are \( \text{kg} \text{ m}^{-2} \text{s}^{-1} \) instead of \( \text{kg} \text{ m}^{-1} \text{s}^{-2} \).

7. In equation (3) in [1] the units of the term \( \kappa \nabla \times V \) are \( \text{kg} \text{ m}^{-1} \text{s}^{-2} \) instead of \( \text{kg} \text{ m}^{-1} \text{s}^{-1} \).

8. The parameter \( K \) in Nomenclature is dimensional whereas it is dimensionless.

9. In Nomenclature the units of dynamic viscosity \( \mu \) are given as \( m^2 \text{ s}^{-1} \) instead of \( \text{kg} \text{ m}^{-1} \text{s}^{-1} \).

10. The same parameter \( m \) is used in equation \( U - cxm \) and in the Hartree parameter. It creates confusion.

11. In Nomenclature it is written that the units of parameters \( \alpha \), \( \beta \) are \( \text{kg} \text{ m}^{-1} \text{s}^{-1} \). The correct units are \( \text{kg} \text{ m}^{-1} \text{s}^{-1} \).
12. The dimensionless Eckert number has not been defined in the paper.

13. The dimensionless Prandtl number has not been defined in the paper.

14. The dimensionless Reynolds number has not been defined in the paper.

References


Comment of the Editors: the authors of the paper did not respond to the comment.