Erratum


Po-Wen Hsieh, Suh-Yuh Yang *

Department of Mathematics, National Central University, No. 300, Jhongda Road, Jhongli City 32001, Taiwan

The purpose of this note is to point out an error in the problem description in the publication [1]. We will follow the notations and definitions of [1].

In the paragraph below Eq. (2.1), we state that “\(a = \left(-\sin \alpha, -\cos \alpha\right)\), \(\alpha\) is the angle between the externally applied magnetic field \(b_0\) and the \(x\)-axis”. This statement should be corrected as follows: “the convection field is given by \(a := (a_1, a_2) = (-\sin \alpha, -\cos \alpha)\) and \(\alpha \in [0, \pi/2]\) is the angle from the positive \(y\)-axis to the externally applied magnetic field \(b_0\), measured in the clockwise direction”. We refer the reader to [2–4] for more details on the problem formulation. Accordingly, the schematic diagrams Figs. 5.1, 5.2 and 5.6 in [1] should be replaced by the new ones.

In Example 5.1, the statement “the external magnetic field is perpendicular to the \(x\)-axis \((\alpha = \pi/2)\), see Fig. 5.1” should be corrected as “the external magnetic field is perpendicular to the \(y\)-axis \((\alpha = \pi/2)\), see Fig. 5.1”.

In Example 5.2, the statement “the externally applied magnetic field makes various positive angles \(\alpha\) with the \(x\)-axis (see Fig. 5.2)” should be corrected as “the externally applied magnetic field makes various positive angles \(\alpha\) with the \(y\)-axis (see Fig. 5.2)”.

Finally, in Example 5.3, the statement “placed one in each of the walls of the duct where the applied magnetic field \(b_0\) is perpendicular (see Fig. 5.6)” should be corrected as “placed one in each of the walls of the duct where the applied magnetic field \(b_0\) is parallel (see Fig. 5.6)”.

References

Fig. 5.1. Boundary conditions of the Shercliff problem.

Fig. 5.2. Boundary conditions of Example 5.2.

Fig. 5.6. Boundary conditions of Example 5.3.