Natural convection in an inclined square enclosure subject to sinusoidal temperature profile

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AIP Conf. Proc. 1522, 68 (2013); http://dx.doi.org/10.1063/1.4801106
Conference date: 18–20 December 2012
Location: Palm Garden Hotel, Putrajaya, Malaysia

Abstract

A numerical study on natural convection in an inclined square enclosure with sinusoidal temperature profile on the left wall is considered, while the right wall is kept with constant temperature. The horizontal walls of the enclosure are adiabatic. The governing equations are solved by using the finite difference method for different Rayleigh numbers and inclination angles. The results are provided in the form of streamlines, isotherms and Nusselt numbers. The flow patterns are dependent on Rayleigh numbers and inclination angles. The heat transfer increases first and then decreases with increasing the inclination of the enclosure.

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Published online 22 April 2013

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