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3	PhD Thesis Title	Numerical Investigations and Parametric Studies of Flow and Heat Transfer Characteristics in Enclosed Cavities for Varied Aspect Ratios and Boundary Conditions	
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7	<u>Brief synopsis</u> The numerical studies on natural convection in cavities reported in the literature are limited. The correlations between the average Nusselt numbers versus Rayleigh numbers required to design an effective heat transfer cabinets are limited in the current literature. In this thesis, numerical studies on natural convection in cavities with different types of boundary conditions have been carried. The enclosure used for flow and heat transfer analysis has been bounded by adiabatic top wall, constant temperature cold vertical walls and a horizontal bottom wall. The bottom wall is subjected to temperature/heat flux/convective boundary conditions. The temperature and heat flux boundary conditions are varied as uniform / sinusoidal / linearly varying along the bottom wall. Nusselt numbers are computed for Rayleigh numbers (Ra) ranging from 10^3 to 10^7 and aspect ratios (H/L) from 0.5 to 3. Also, three Prondtl numbers have been studied in the case of convective boundary conditions for all Ra considered earlier. It is found that as Rayleigh number increases, average Nusselt number increases in all cases, as expected. The constant temperature at the bottom wall gives higher average Nusselt number. Similarly the constant heat flux at the bottom wall also gives higher average Nusselt number. Average Nusselt number increases with aspect ratio for bottom wall. However, average Nusselt number decreases with aspect ratio for side wall. Correlations have been developed between the average Nusselt number and the Rayleigh number so that the results from the present thesis can be used in future.		