

**CHT-17: NUMERICAL STUDIES ON FLUID FLOW AND HEAT TRANSFER
CHARACTERISTICS FOR FLOW PAST TWO TANDEM ELLIPTIC CYLINDERS**

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ABSTRACT In this paper, fluid flow and heat transfer characteristics are numerically investigated for flow past two elliptic cylinders arranged in tandem manner. Numerical computations are performed using an in-house code based on SUPG - FEM algorithm. The code validation is done by comparing the computational results of elliptic cylinder of Axis Ratio (AR) = 1.0 (circular cylinder) with literature data. Parametric studies are carried out by varying the AR of the elliptic cylinders (AR = 0.5, 0.8 and 1.0) and spacing ratio ($L/D = 1.5, 2.0, 2.5, 3.5$ and 5.0) for different Reynolds number values ($Re = 100$ and 200). Isothermal boundary condition is imposed on the surface of both cylinders. From the results obtained, it is observed that the convective heat transfer is more when AR is less. Also, the drag coefficient and Nusselt number increases with increase in spacing ratio for most of the cases.