

6. CONCLUSIONS

In this work, a hexagonal cylinder in a square domain has been simulated. The work forecasts the steady, three-dimensional incompressible flow as well as the thermal behaviour for a cross flow past the hexagonal cylinder numerically. It is found that Reynolds number has a important role on area weighted average of Nusselt number. Nusselt number increases with the increase Reynolds number increases and turbulence intensity. Initially the value of Pressure coefficient decreases and then it increases with increase in Reynolds number. Prediction of transition from laminar to turbulent regime is done. By drawing tangents at the laminar data ranges and at the end turbulent regime, we can recognize the transition zone. The results from purely laminar and those from turbulent model agree well with the results from transition SST model.

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