# A COMPARATIVE STUDY ON SOLUTION METHODS IN EXTENDED NEAR WALL ZONE OF TURBULENT FLOW

**Sabah Tamimi**
Al Ghurair University
**UAE**

## ABSTRACT

In present work, a finite element based solution technique for general steady-state two-dimensional, incompressible confined turbulent flow in long parallel-sided channels with a one-equation model to depict the viscosity of turbulence has been developed and adopted. Particular attention is given to the important aspect of studying the flow behaviour in the 'near wall zone' of confined flow. It is particularly important that the transfer of mass and momentum within this zone is modelled accurately in order to obtain correct overall predictions. In this paper, two different methods of solutions have been tested when the near wall zone has been extended away from the solid wall.

**Keywords:** Turbulent flow; Pressure flow; Coupled and iterative methods; Extended near wall zone; Finite element method.