Abstract

The study focuses an analysis of natural convective heat transfer amid two walls maintained at different temperatures. Hence, this investigation involves a study of temperature distributions between the wall at lower temperature and the wall at higher temperature for different heights.

Problem Statement

Investigate the problem numerically with a steady solver buoyantSimpleFoam. Use k-ω SST turbulence model and validate the results with the experimental outcomes.

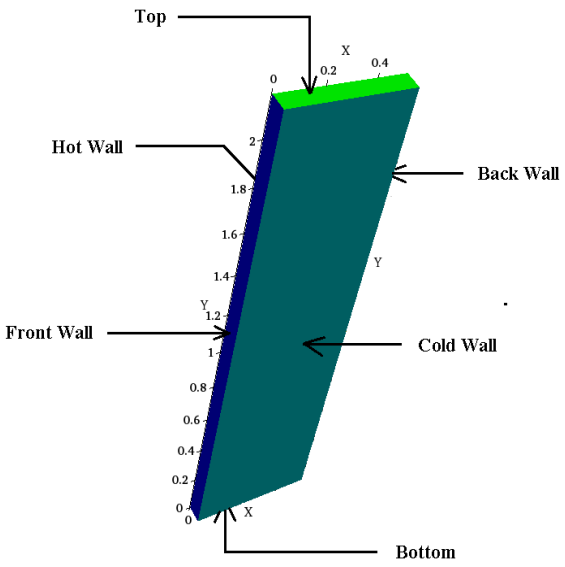

Fig.1. Numerical Domain

Geometry details and fluid properties:

Dimensions = 2.18 m × 0.076 m × 0.52 m

Number of cells = 90,688

mu = 1.831e-05 Pa.sec

c_p = 1005 J/kgK

Pr = 0.704

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