Abstract

The mist film cooling investigation aims the study of effectiveness on a flat plate. This study includes the validation of the numerical results and its comparison with the effectiveness of air film cooling.

Problem Statement

Perform the simulation with the solver *reactingMultiphaseEulerFoam*. Inject the coolant at an angle of 35^0. Use the thermal phase change model to capture evaporation.

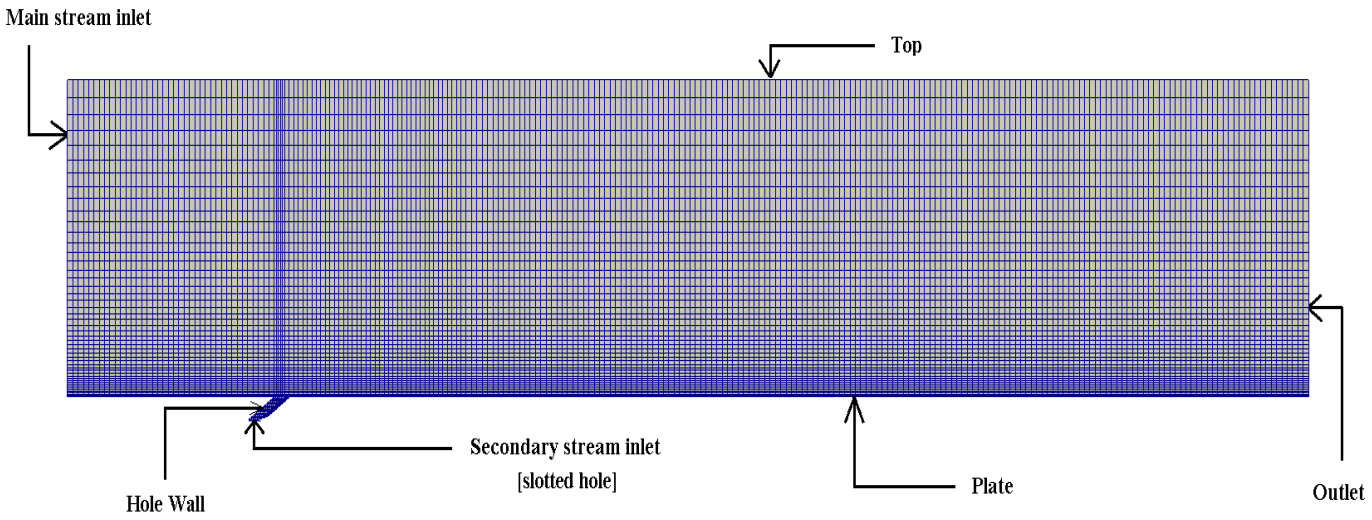

Fig.1. 2D domain with mesh

Water properties and other initial parameters:

$(mu)_{water}$ = 3.645e-05 Pa.sec

$(C_p)_{water}$ = 4195 J/kgK

$(Pr)_{water}$ = 2.289

s = 0.004 m

T_h = 400K

T_c = 300K

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