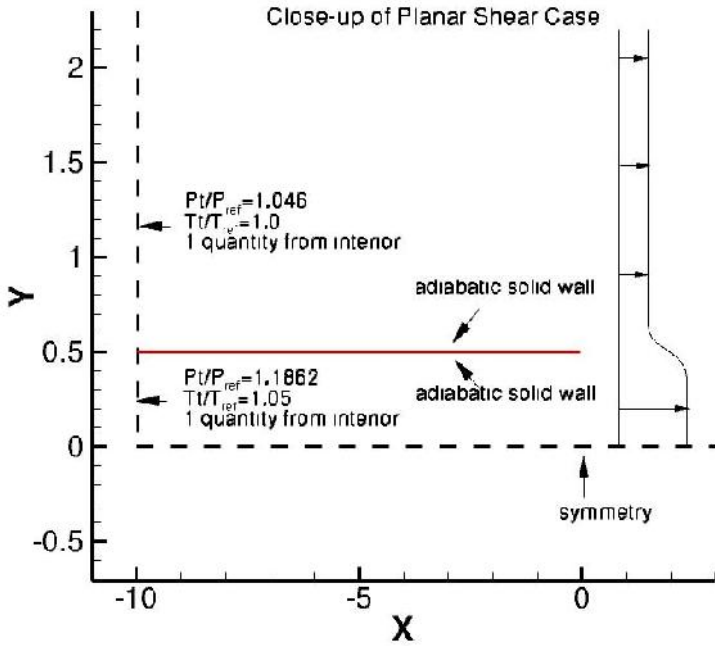


Support to Safety Analysis of Hydrogen and Fuel Cell Technologies

Verification type	Numerical Solution
Database reference	NUM-8
Topic / Application	Planar Shear Flow Turbulence model implementation
Physics	Turbulence modelling
Summary	NASA verification of turbulence models including Spalart-Allmaras, Shear Stress Transport, and others
Description	<p>This is one case in an online database for verification, primarily aimed at turbulence model implementation.</p> <p>This case examines free shear flow, the modelling of this is relevant for H2 safety practitioners regarding jets, turbulence mixing.</p> <p>The purpose is to provide a large sequence of nested grids of the same family, along with results from existing CFD codes that employ specific forms of particular turbulence models, in order to help programmers verify their implementations of these same models.</p>
Case Title	2D Planar Shear Verification Case - Intro Page
Authors	Curator: Christopher Rumsey, Langley Research Center
Year	2015 (updated)
Online reference	http://turbmodels.larc.nasa.gov/shear.html
Case image	 <p>The diagram, titled "Close-up of Planar Shear Case", shows a 2D coordinate system with X and Y axes. The X-axis ranges from -10 to 0, and the Y-axis ranges from -0.5 to 2. A horizontal line at Y=0.5 represents the upper boundary, and a horizontal line at Y=0 represents the lower boundary. Both boundaries are labeled "adiabatic solid wall". A vertical dashed line at X=0 is labeled "symmetry". Two sets of flow conditions are indicated: the upper flow has $P_t/P_{ref} = 1.046$ and $T_t/T_{ref} = 1.0$, and the lower flow has $P_t/P_{ref} = 1.1862$ and $T_t/T_{ref} = 1.05$. Arrows indicate the flow direction from left to right.</p>

The SUSANA project is co-funded by the European Commission within the 7th Framework Program

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Governing equations	For summary of SA turbulence implementation: http://turbmodels.larc.nasa.gov/spalart.html#sa For summary of SA turbulence implementation: http://turbmodels.larc.nasa.gov/sst.html#sst
Results	N/A

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