Verification type	Numerical Solution
Database reference	NUM-9
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	This is one case in an online database for verification, primarily aimed at turbulence model implementation. This case examines flow over a bump. It advances over the flat plate by adding a pressure gradient, and is of relevance in examining turbulence generation and separation around obstacles. This would have an application in e.g. acceleration of H2 flame fronts around tube bundles in confined spaces such as on oil rigs). 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.
Case Title	2D Bump-in-channel Verification Case - Intro Page
Authors	Curator: Christopher Rumsey, Langley Research Center
Year	2015 (updated)
Online reference	http://turbmodels.larc.nasa.gov/bump.html

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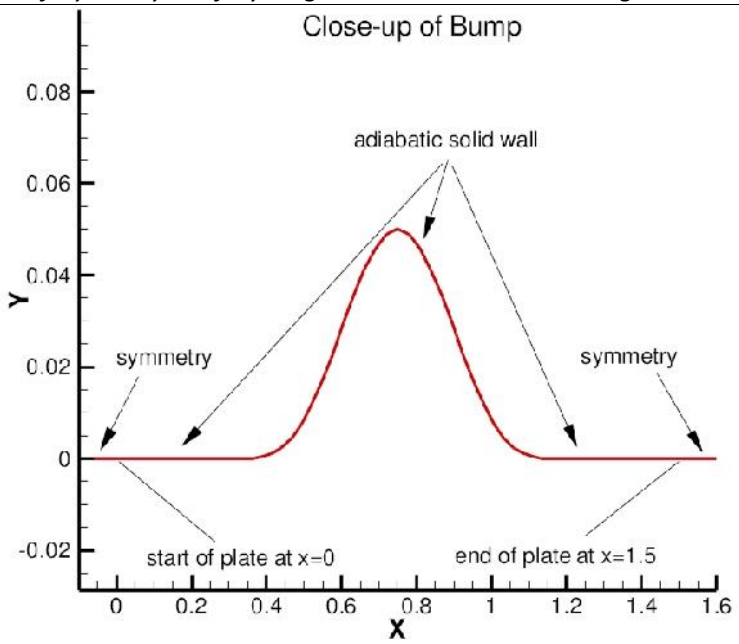
Case image	
Governing equations	For summary of SA turbulence implementation: http://turbmodels.larc.nasa.gov/spalart.html#sa For summary of SA turbulence implementation: http://turbmodels.larc.nasa.gov/sst.html#sst
Results	N/A

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