User Defined Functions - Verification & Validation

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Verification and Validation

Verify that the user defined function is correct. Calculate the user-defined scalar only for a single wall boundary, by going to Results->Reports->Surface Integrals, and selecting the type as an Integral, and the field variable as the User Defined Scalar on the desired wall section, and clicking 'Compute'. This can be compared to the lift calculated in Fluent under Results->Reports->Forces and printing the lift coefficient on the same wall section.

Note that if you take the surface integral of the pressure over the entire cylinder using the UDF, you'll get a very low value (~ 1e-5 N). That is because the jet forcing is symmetric about the x axis for the case in the tutorial. The objective of the forcing in the tutorial is to delay separation, not generate a lift force. If you use non-symmetric forcing, you'll be able to generate a lift force.

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