

LDV Data Release for the Juncture Flow Model Configured with the Symmetric Wing Geometry

May 23, 2022

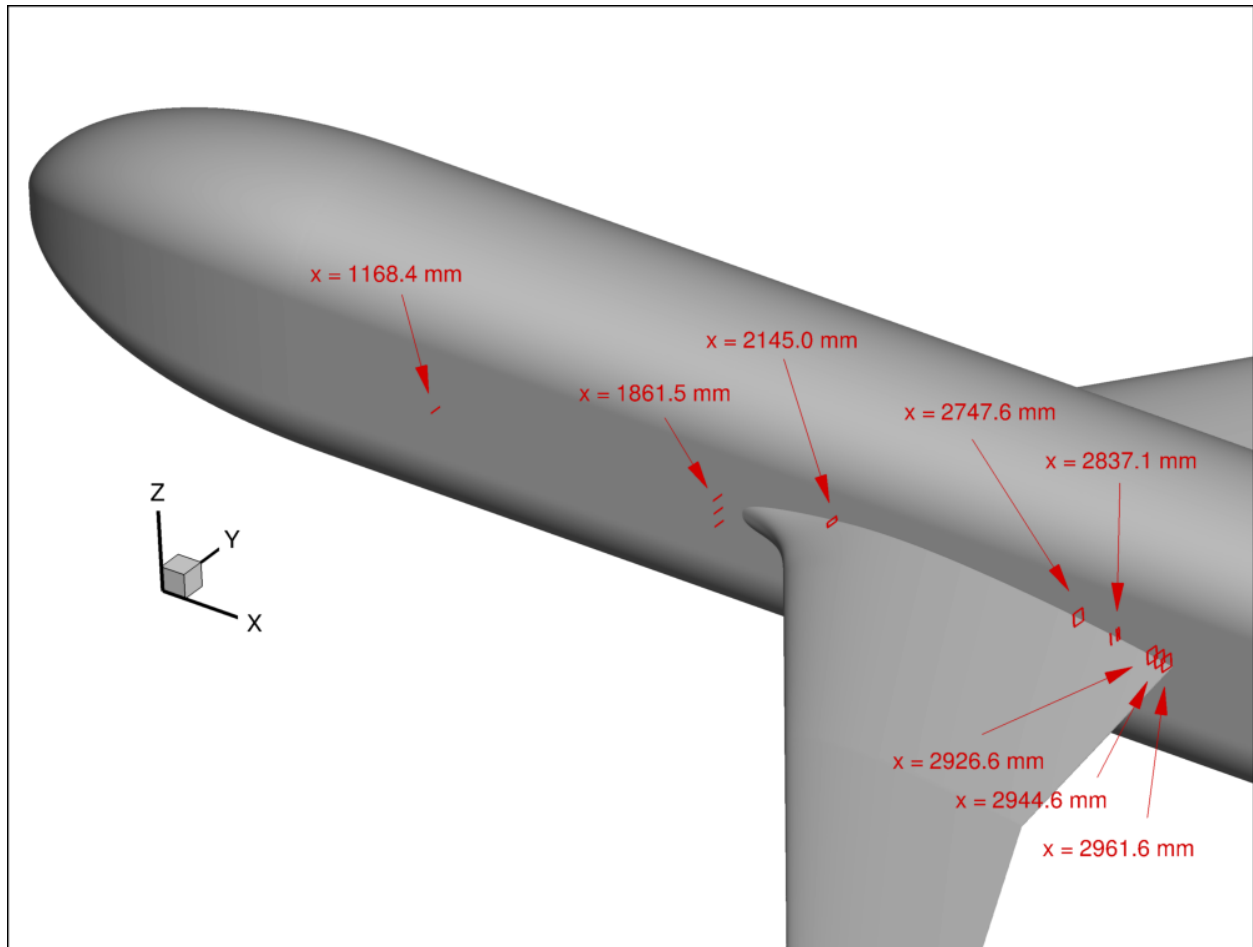
Each LDV data file contains multiple columns of data, with the first row providing the parameter label for each column and the second row providing a zone label for Tecplot. The column labels in each data file are defined as follows:

Parameter(s)	Description
X	X coordinate (mm) of the measurement point in a body-fixed coordinate system with origin at the model nose tip. Positive X is along the length of the body.
Y	Y coordinate (mm) of the measurement point in a body-fixed coordinate system with origin at the model nose tip. Positive Y is toward the starboard side of the model.
Z	Z coordinate (mm) of the measurement point in a body-fixed coordinate system with origin at the model nose tip. Positive Z is up.
Rec	Reynolds number based on the chord at the wing planform break divided by 10^6 .
alpha	Model geometric pitch angle in degrees
u	X component of mean velocity, non-dimensionalized by the freestream tunnel velocity.
v	Y component of mean velocity, non-dimensionalized by the freestream tunnel velocity.
w	Z component of mean velocity, non-dimensionalized by the freestream tunnel velocity.
uu, vv, ww, uv, uw, vw	Six independent components of the Reynolds-stress tensor, non-dimensionalized by the freestream tunnel velocity squared.
uuu, vvv, www, uvw, uuv, uuw, uvv, uww, vvv, www	Ten independent components of the velocity triple products, non-dimensionalized by the freestream tunnel velocity cubed.
U_X, U_Y, U_Z	Uncertainty in the (X, Y, Z) coordinates for each measurement point in mm.
U_Rec	Uncertainty in the Reynolds number based on the chord at the wing planform break divided by 10^6 .
U_alpha	Uncertainty in the model geometric pitch angle in degrees.
U_u, U_v, U_w	Uncertainty in the X, Y, and Z-components of the mean velocity, non-dimensionalized by the freestream tunnel velocity.
U_uu, U_vv, U_ww, U_uv, U_uw, U_vw	Uncertainty in the Reynolds-stress components, non-dimensionalized by the freestream tunnel velocity squared.
U_uuu, U_vvv, U_www, U_uvw, U_uuv, U_uuw, U_uvv, U_uww, U_vvv, U_vww, U_www	Uncertainty in the velocity triple products, non-dimensionalized by the freestream tunnel velocity cubed.

The following table provides a list of the available data files and includes: the filename, the X location at which the measurement was made, the geometric pitch angle of the model, and a description of the file contents. Below the table is a figure that shows the spatial locations of the LDV measurements.

Filename	X (mm)	α (deg)	Description
alpha0.0_x1168.4_z0.0_sym.dat	1168.4	0.0	Profile (-Y direction) on the fuselage at X = 1168.4 mm, Z = 0.0 mm.
alpha0.0_x1861.5_zm30.0_sym.dat	1861.5	0.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = -30.0 mm
alpha0.0_x1861.5_z0.0_sym.dat	1861.5	0.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = 0.0 mm
alpha0.0_x1861.5_z30.0_sym.dat	1861.5	0.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = 30.0 mm
alpha0.0_x2145.0_sym.dat	2145.0	0.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2145.0 mm.
alpha0.0_x2747.6_sym.dat	2747.6	0.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2747.6 mm.
alpha0.0_x2837.1_ym239.1_sym.dat	2837.1	0.0	Profile (Z direction) at X = 2837.1 mm, Y = -239.1 mm.
alpha0.0_x2837.1_ym246.1_sym.dat	2837.1	0.0	Profile (Z direction) at X = 2837.1 mm, Y = -246.1 mm.
alpha0.0_x2837.1_ym266.1_sym.dat	2837.1	0.0	Profile (Z direction) at X = 2837.1 mm, Y = -266.1 mm.
alpha0.0_x2926.6_sym.dat	2926.6	0.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2926.6 mm.
alpha0.0_x2944.6_sym.dat	2944.6	0.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2944.6 mm.
alpha0.0_x2961.6_sym.dat	2961.6	0.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2961.6 mm.
alpha1.0_x1168.4_z0.0_sym.dat	1168.4	1.0	Profile (-Y direction) on the fuselage at X = 1168.4 mm, Z = 0.0 mm.
alpha1.0_x1861.5_zm30.0_sym.dat	1861.5	1.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = -30.0 mm.
alpha1.0_x1861.5_z0.0_sym.dat	1861.5	1.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = 0.0 mm.
alpha1.0_x1861.5_z30.0_sym.dat	1861.5	1.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = 30.0 mm.
alpha1.0_x2145.0_sym.dat	2145.0	1.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2145.0 mm.
alpha1.0_x2747.6_sym.dat	2747.6	1.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2747.6 mm.
alpha1.0_x2837.1_ym239.1_sym.dat	2837.1	1.0	Profile (Z direction) at X = 2837.1 mm, Y = -239.1 mm.
alpha1.0_x2837.1_ym246.1_sym.dat	2837.1	1.0	Profile (Z direction) at X = 2837.1 mm, Y = -246.1 mm.

alpha1.0_x2837.1_ym266.1_sym.dat	2837.1	1.0	Profile (Z direction) at X = 2837.1 mm, Y = -266.1 mm.
alpha1.0_x2926.6_sym.dat	2926.6	1.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2926.6 mm.
alpha1.0_x2944.6_sym.dat	2944.6	1.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2944.6 mm.
alpha1.0_x2961.6_sym.dat	2961.6	1.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2961.6 mm.
alpha5.0_x1168.4_z0.0_sym.dat	1168.4	5.0	Profile (-Y direction) on the fuselage at X = 1168.4 mm, Z = 0.0 mm.
alpha5.0_x1861.5_zm30.0_sym.dat	1861.5	5.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = -30.0 mm.
alpha5.0_x1861.5_z0.0_sym.dat	1861.5	5.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = 0.0 mm.
alpha5.0_x1861.5_z30.0_sym.dat	1861.5	5.0	Profile (-Y direction) on the fuselage at X = 1861.5 mm, Z = 30.0 mm.
alpha5.0_x2145.0_sym.dat	2145.0	5.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2145.0 mm.
alpha5.0_x2747.6_sym.dat	2747.6	5.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2747.6 mm.
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alpha5.0_x2837.1_ym246.1_sym.dat	2837.1	5.0	Profile (Z direction) at X = 2837.1 mm, Y = -246.1 mm.
alpha5.0_x2837.1_ym266.1_sym.dat	2837.1	5.0	Profile (Z direction) at X = 2837.1 mm, Y = -266.1 mm.
alpha5.0_x2926.6_sym.dat	2926.6	5.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2926.6 mm.
alpha5.0_x2944.6_sym.dat	29244.6	5.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2944.6 mm.
alpha5.0_x2961.6_sym.dat	2961.6	5.0	(Y, Z)-plane in the wing-fuselage junction region at X = 2961.6 mm.



LDV Measurement Locations. Profile measurements (in the Y- or Z-direction) are depicted as lines in figure while (Y, Z)-planar surveys are depicted as rectangular regions in the figure. Note that the origin for the coordinate system is located at the model nose tip.