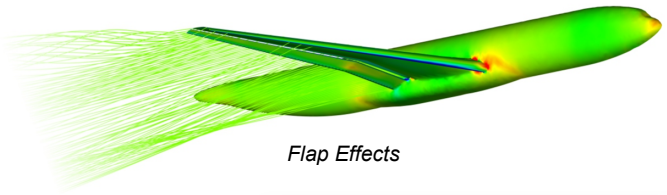
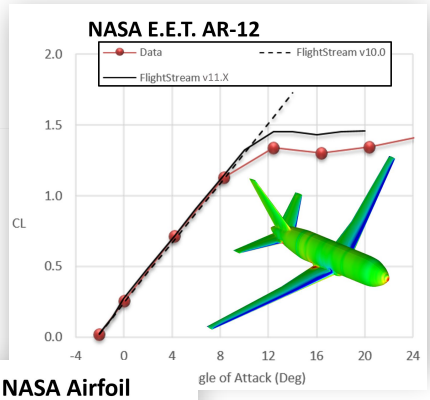
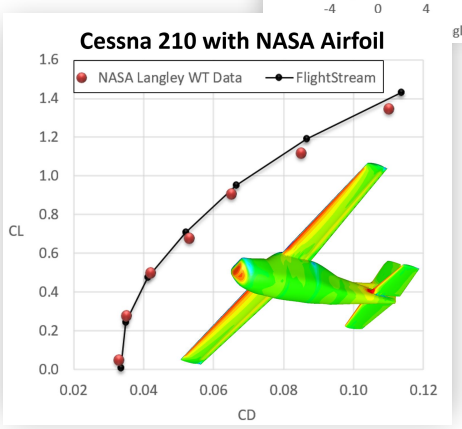
FlightStream HIGH FIDELITY AERODYNAMICS TOOL



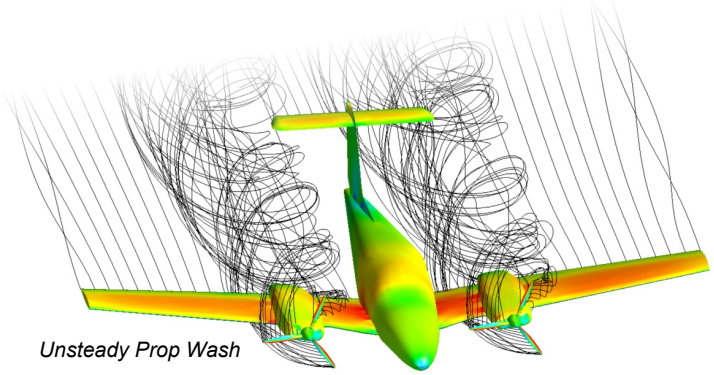
Flap Effects



Lift Curve Validation



Drag Polar Validation



Unsteady Prop Wash

FlightStream® is a high fidelity aerodynamics tool perfectly suited for aircraft designers. The integrated meshing tool allows users to easily apply a surface mesh to their CAD models. The unique vorticity-based flow solver, which uses only a surface mesh, produces accurate solutions in a fraction of the time required by full volume mesh CFD solvers. The solver is capable of modelling and analyzing aircraft, propellers, high-lift devices and jet engine effects. The intuitive user interface, utility of the meshing tool and robustness of the flow solver allow users of all skill levels to quickly and easily obtain accurate aerodynamic results.

What Makes FlightStream® Unique

FlightStream® is a unique aerodynamics tool with many advantages over traditional CFD and panel codes. For example:

- FlightStream® can produce aerodynamic load results with the same accuracy as high fidelity CFD software in a matter of minutes, instead of hours.
- The solver is based on surface vorticity instead of pressure-integration, which is more robust than traditional panel code solvers.
- Unstructured surface meshes can be easily created from CAD, eliminating the need to develop time-intensive structured meshes required by most panel codes, or extensive volume meshes for traditional CFD solutions.
- The boundary layer model for skin friction drag uses surface vorticity.

Extensive Validation

Accurate and reliable results are the foundation of FlightStream® development. To ensure accuracy and reliability, extensive validation has been performed using peer reviewed wind tunnel data. Comparing FlightStream® results with experimental data for all types of configurations and flight conditions has successfully validated its solutions.

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Complex Modeling Applications

Propellers can be modelled in steady and unsteady flow. For steady flow, the propellers are modeled as actuator disks to simplify the analysis. All that is required are the operating characteristics of the propeller (e.g. thrust, power and RPM). In unsteady flow, propellers are modeled as rotating wings, which accurately captures the interactions between the propellers, wings and bodies.

High-Lift Devices such as flaps, slats, spoilers, etc. can be modelled in FlightStream® to analyze how the flow over the wing interacts with these complex geometries.

Jet Engine Effects can be modelled in FlightStream® without a structured volume mesh, which saves valuable time when it comes to analyzing this complicated flow problem.

FlightStream® allows the structural analysis engineer to quickly evaluate fluid interaction effects, by generating pressure forces and mapping load distributions and moments.

Fast and Simple Work Flow

Import Geometry

FlightStream® is compatible with CAD software such as SolidWorks, AutoCAD, Solid Edge, CATIA, Autodesk and many more.

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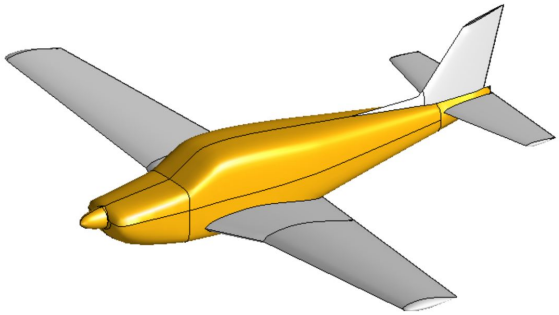
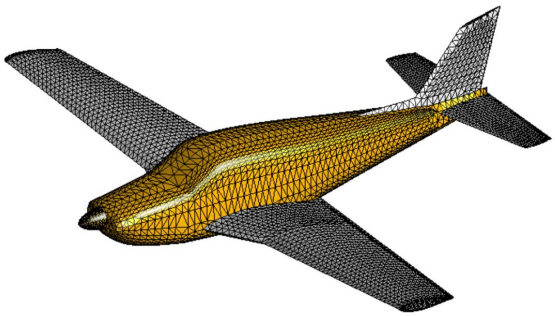


Generate Mesh

Have a CAD model but no mesh? No problem! FlightStream® can automatically generate an unstructured surface mesh based on the imported CAD model.

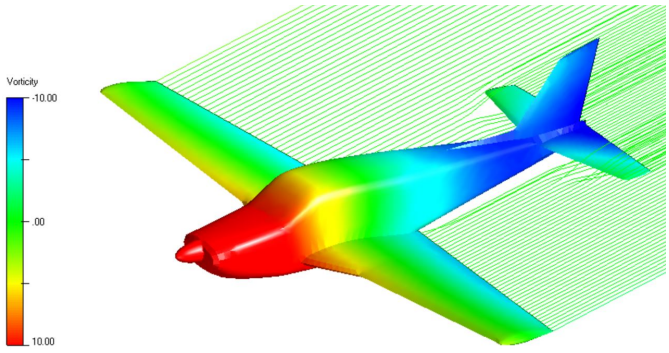
2



Run Solution

Quickly set up propeller or jet engine models and run the solver to obtain accurate and reliable results.

3



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