



## AERODYNAMIC STRIP THEORY

J2 Elements utilises integrated strip theory to calculate total aerodynamic coefficients and derivatives automatically. This advanced plug-in provides rapid analysis and the ability to investigate different configurations, wing planforms and airfoil characteristics – all without the need to calculate complex derivatives and coefficients.

### KEY FEATURES AND BENEFITS

#### 1. Break a lifting surface down into individual strips

- You have the ability to define the number of strips along the surface for increased fidelity

#### 2. Each strip can be individually sized

- Enables you to define strips on any wing planform to investigate various shapes

#### 3. Strips can have their own coefficients

- Define the airfoil section coefficients and let J2 Elements do the rest

#### 4. Local angle of attack automatically calculated

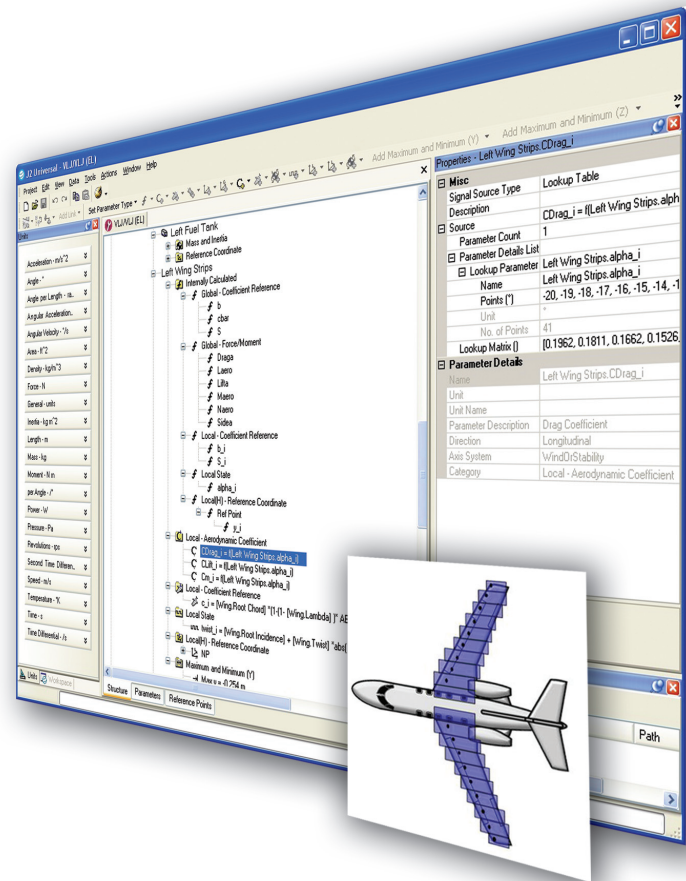
- This enables the lift distribution to be calculated dependent upon planform, dihedral and twist

#### 5. Automatically calculates the dynamic characteristics

- Dynamic effects can be found without the need to calculate derivatives

#### 6. Velocity changes shown on each strip

- Illustrating changes due to Roll, Yaw as well as Pitch



## J2 ELEMENTS DELIVERS

### Features

### Advantages and Benefits

Easy-to-use Graphical User Interface

Logically build up the lifting surface geometry and planform to match any shape and profile. Multiple configurations can be evaluated very quickly.

Automatic Dynamic Behaviour Calculations

No need to go through the lengthy process of calculating dynamic derivatives and characteristics. Complete aircraft dynamic behaviour can be found from simple airfoil section coefficients.

Assess Designs from the Very Beginning

Why wait until CFD or Wind Tunnel data has been generated? With simple basic characteristics, the aircraft can be 'flown' straight away, using J2 Freedom.

Assess Any Design

The functionality of J2 Elements does not depend on the aircraft conforming to a specific design so any configuration and design can be evaluated.

Automatic Load Distribution

From the simple information entered into J2 Elements, the lift distribution across the wing is calculated dynamically, enabling loads and stresses to be evaluated.

Twist and Dihedral Effects

Enter the twist and neutral point distribution for any planform and let J2 Elements investigate its impacts on handling characteristics. Assess tip stall and the impact of washout straight away.

Optimised Design

Because of the speed at which the data can be entered, multiple configurations of wing shapes and aircraft designs can be assessed and compared, to get the best characteristics with the minimum amount of effort.



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