APPENDIX I

Angle Definitions

The definitions of α and β are the same as that given in reference 20 with the exception that the direction of positive β is reversed. The figures below illustrate the difference.

I.1 Standard-type Grid

(z is up and y is out the span)

This is the default for CFL3D-format grids (also applies when **ialph** = 0 for PLOT3D-format grids).

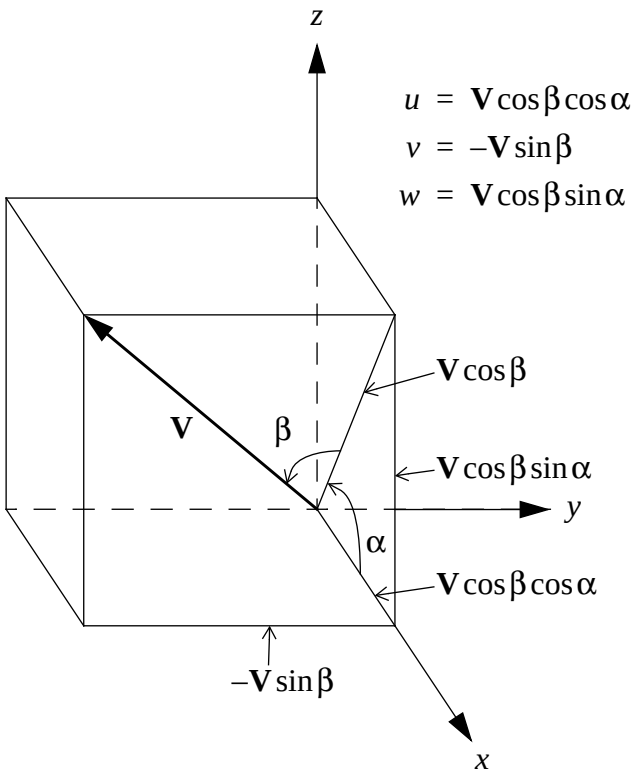

Figure I-1. Grid coordinate system for standard-type grids.

Drag = component of forces parallel to $\mathbf{V}$ direction

Lift = component of forces perpendicular to $\mathbf{V}\cos\beta$ direction in the $x-z$ plane

I.2 Non-standard-type Grid

(y is up and z is out the span)

(**ialph** > 0 for PLOT3D-format grids)

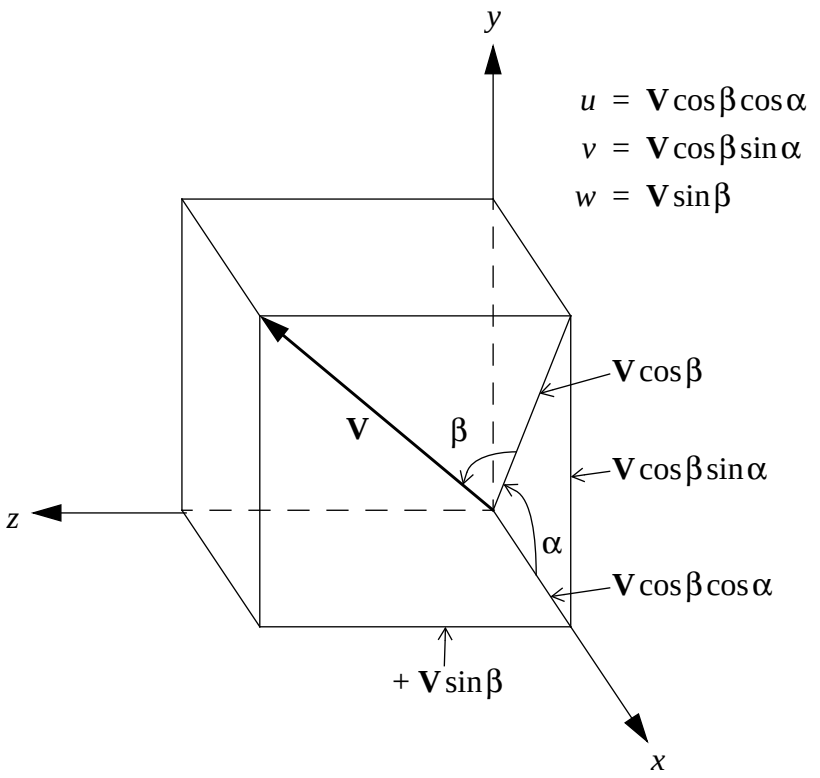

Figure I-2. Grid coordinate system for non-standard-type grids.

Drag = component of forces parallel to $\mathbf{V}$ direction

Lift = component of forces perpendicular to $\mathbf{V}\cos\beta$ direction in the $x-y$ plane