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Aerolab

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Reliable aerodynamic simulation program that helps you calculate various aerodynamic parameters and plot data with the aid of graphs

Aerolab is a lightweight CAD application designed specifically for helping you carry out aerodynamic simulations that can be useful for estimating drag, lift and stability of rockets at zero angle of attack in the velocity range from 0 to 8 Mach.

Based on user-defined rocket dimensions and mass properties, the tool is able to calculate the center of gravity and inertial moments around pitch/yaw axis and roll axis.

💻 **RUNS ON:**

Windows All

🗄 **FILE SIZE:**

660 KB

⬇ **FILENAME:**

aerolab1_3.zip

📁 **MAIN CATEGORY:**

Science / CAD

⚙ **DEVELOPER:**

Hans Olaf Toft

🌐 VISIT HOMEPAGE

Take advantage of the portable running mode

The tool comes in a portable package which can be deployed on your system by skipping the installation steps. Plus, it doesn't write any entries in your Windows registry, so it doesn't get bloated with unnecessary items.

You may copy it on any USB flash drive or other storage devices and run it on the target computer on the fly. Plus, you don't need administrator privileges in order to open the application.

User interface and supported file formats

You are welcomed by a clean and intuitive layout that reveals a drawing of the rocket design currently loaded in memory, and you may also view the number of mechanical parts defined for the current design.

The app works with the following file formats: ROC, DRG, DAT, PTL or DXF.

Creating a drawing from scratch

Aerolab gives you the possibility to clear the configuration loaded in the main panel and define a new one by loading information from ROC files or creating a rocket configuration.

A rocket configuration can be defined by entering the length and base diameter of the nosecone, selecting the shape of the nosecone (cone, parabolic, ellipsoid, ½ power or ¾ power), and previewing the nosecone type.

What's more, you can provide details about the total length of the rotational symmetrical rocket body, rocket nozzle exit diameter, number of conical transitions in the rocket, fin dimensions, launch lug dimensions, conditions, and other scientific details.

Additionally, you are given the freedom to change the scale of a rocket configuration and view the calculation revealed in a graphical form based on drag coefficient, lift curve slope coefficient, center of pressure data or vehicle properties.

Plotting options

Aerolab gives you the possibility to calculate the aerodynamic parameters of the current configuration and view the graphical representation of the results with the selected outputs as

The tool is able to keep track of the mechanical parts in a rocket and lets you add a new part, edit or delete it, combine or translate parts, as well as import or delete all parts.

An overall reliable CAD app

All in all, Aerolab proves to be a reliable aerodynamic simulation program that helps you calculate aerodynamic parameters and plot data with the aid of graphs.

Filed under

#Aerodynamic simulation,   #Rocket drag,   #Rocket stability,   #Rocket,   #Aerodynamic,   #Simulator,   #Drag

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Aerolab was reviewed by **Ana Marculescu** ⭐⭐⭐⭐⭐   4.5/5

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