

# 3D Convection through an Electronics Box - Numerical Solution

Author: Ben Mullen, Cornell University

[Problem Specification](#)

[1. Pre-Analysis & Start-Up](#)

[2. Geometry](#)

[3. Mesh](#)

[4. Physics Setup](#)

[5. Numerical Solution](#)

[6. Numerical Results](#)

[7. Verification & Validation](#)

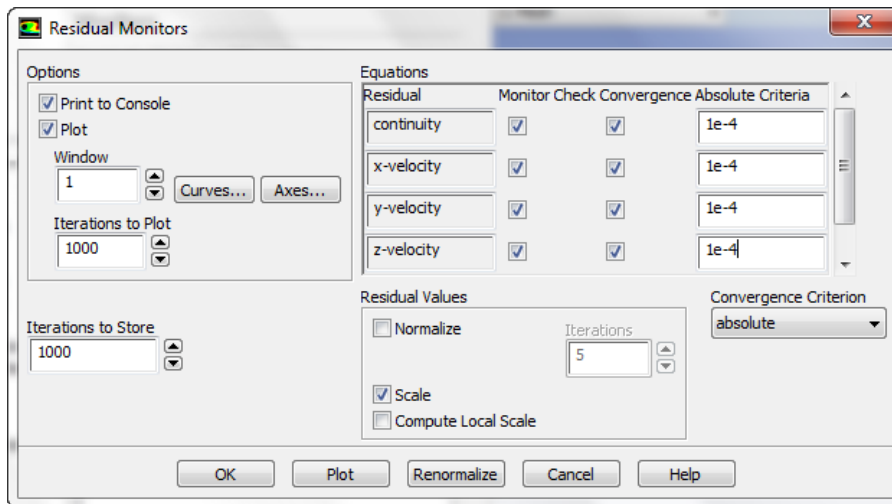
[Exercises](#)

[Comments](#)

## Numerical Solution

### Monitors

Now, we need to set the parameters controlling the solver. In the *Outline*, select **Monitors**. In the *Monitors* window, select **Residuals - Plot, Print** and press **Edit...**. Set the **Absolute Criteria** for each variable to  $1e-04$ .



### Solution Initialization

Next, we need to initialize the solution. In the *Outline*, select **Solution Initialization**. Under **Compute From**, select **Inlet**, and press **Initialize**. Press **OK** in the window that pops up. We are now ready to solve the simulation.

### Run Calculation

In the *Outline*, select **Run Calculation**. Set the **Number of Iterations** to 5000 and press **Calculate**. The simulation will take a couple of hours to run. In addition, the solution may not converge.

[Go to Step 6: Numerical Results](#)

[Go to all FLUENT Learning Modules](#)