Introduction

1. In the Introduction show:

    a.the essence of the examined issue,

    b. the purpose of the study,

    c. physical phenomena taken into account in the analysis,

    d. the scale of the size of the physical parameters and the geometrical dimensions of the installation.

2. Make the appropriate illustrations and sketches

    a.mark the most important boundary conditions, parameters, comments,

    b. remember that the text in the illustrations should be of a similar size to the text of the report,

    c. All figures and tables should be numbered and clearly described in the text.

Numerical model

The report should contain complete data and descriptions of the procedures that allow the reproduction of the results. Therefore, the following should be described in detail:

1. Simulation type (steady state, transient state)

    a. time step

2. Computing domains

    a. Material properties (provide assumptions about the working factors and sources from which the thermophysical properties were taken)

    b. description of equations solved in the model (e.g. mass, momentum, energy conservation equations)

    c. used calculation methods, diefference schemes, turbulence and heat transfer models, other models used

    d. additional assumptions (e.g. the influence of an external gravitational field).

3. Boundary conditions

    a. The type and location of all boundary conditions and their indication in the illustration.

    b. Details of assumptions and parameters.

4. Initial conditions

5. Selection of iterative convergence criteria: setting residual levels (rules) and selecting additional variables important for a given problem, which are monitored during the calculations (monitor points)

Description of the numerical grid

1. Present the illustrations showing the numerical grid used in the research (views, sections, details). Describe its type, number of computing elements and nodes, as well as average and minimum quality.

2. Present the results of the analysis of the effect of mesh density on the simulation results. In the form of graphs and tables, show the variability of the selected results depending on the applied grid. Justify the selection of the target numeric grid.

Presentation and discussion of the results

1. Present in the form of contours illustrations of pressure distribution, velocity, temperature on selected surfaces and / or sections.

    a. be sure to adjust the units and format the legend.

2. Visualize the flow with the help of streamlines or velocity vectors.

3. Provide the required graphs and tables. Describe the results presented there, and compare the data series. Interpret the results.

Summary

1. Show what research goals have been achieved.

2. Describe the influence of the parameters analyzed on the selected results.

3. Present the 3 main conclusions that you have drawn after performing the analyzes.