

AUTHOR GUIDELINES

BACKGROUND

The type of paper most likely to be forwarded for review will contain some CFD applied to an industrial or engineering artefact. Here “industrial” should cover the very wide area of activity and interest to reflect NAFEMS readership. Each paper sent for review will have been read by the Editor to see that it both fits within the purpose of the Journal and may reasonably be described as a “CFD case study paper”.

TECHNICAL CONTENT

It is difficult to describe the perfect Journal paper. However, a good idea of the type of paper, its content and style may be found by reading recent back issues. If a paper is to be submitted as a Case Study then it should provide the following.

a) Description of the case study

A full description of the industrial relevance of the study and why it is being performed should be given. Special features not immediately obvious to the general engineering reader should be explained, as should any jargon.

A full description of related experimental or analytical data must be given together with statements as to their quality and accuracy.

The degree of detail, i.e. global parameters (e.g. overall heat transfer coefficient, pressure drop, etc.), point values, or ranges of values with time or position should be described.

b) Description of the CFD model(s)

The description of the CFD model should allow the interested reader to fully appreciate how it simulates the given industrial case. Where the CFD model is deficient, e.g. 2-d representing 3-d or the use of a simple turbulence model, it should be highlighted and reasons given as to where inaccuracies might result.

The CFD model details should cover the flow physics, geometry, meshing, boundary conditions, fluid properties and the solving processes. Any departure from known and accepted techniques should be fully described.

The software should be named if commercially available or described if bespoke. The full description should allow the interested reader to attempt to run the case or be sufficiently informed to enter into communication with the authors.

c) Interpretation of results

The results should be presented and discussed to facilitate the reader's appreciation that the work has been performed well and to a high standard. Many CFD plots with scant and unexplained experimental data is below the standard required by the Journal.

The results should be "self consistent" in obeying conservation laws and "look right" to the eye. A critique should be given where CFD and experimental results are directly compared, errors in the measurements as well as the calculated results should be discussed.

A statement should be given as to whether the results comparison amounts to a "verification" or "validation". Comparisons of different aspects of the model, e.g. other variables or a parametric study, are more convincing than repetitive presentation of the same information.

A review of the overall quality of the results comparison should be communicated to the reader, taking into account the difficulty of the problem, the taking of measurements and what is required for meaningful assessment.

d) Lessons learnt

A very useful aspect of a case study is in learning lessons, especially those that could be passed on to the interested reader.

GENERAL REQUIREMENTS

The papers are published in English. The reviewers assess whether the submitted paper is suitable for the Journal. Authors should ensure that the following requirements are met:

Is the paper:

original, well organised and up-to-date?

free of commercialism?

Can the paper be shortened?

Does the abstract fully describe the paper's intention and main results?

Are the:

results interpreted correctly?

conclusions satisfactory?

illustrations clear and adequately sized?

references sufficient?