

INDUSTRIAL APPLICATIONS OF CFD

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ABSTRACT

This file is an example L^AT_EX file for submission to CFD2017. A limit of 4-10 pages applies (submitted file size < 10MB).

Keywords: CFD, hydrodynamics, chemical reactors .

A complete list of symbols used, with dimensions, is required.

NOMENCLATURE

Greek Symbols

ρ Mass density, [kg/m^3]
 μ Dynamic viscosity, [kg/ms]

Latin Symbols

a PressureCharacteristic length, [m].
 p Pressure, [Pa].
 \mathbf{u} VolumeVelocity, [m/s].

Sub/superscripts

G Gas.
 i Index i .
 j Index j .

INTRODUCTION

The introduction goes here.

MODEL DESCRIPTION

You should give a thorough description of your model.

Example of Subheading

Here is how to produce a numbered equation under a second level heading (James *et al.*, 1988).

Continuity equation

$$\frac{\partial \rho_G}{\partial t} + \nabla \cdot (\rho_G \mathbf{u}) = 0 \quad (1)$$

Example of Sub-subheading

This is how (Luke, 1988) produced an unnumbered equation under a third level heading.

$$\mathbf{J} = \sigma(\mathbf{E} + \mathbf{u} \times \mathbf{B}) \quad (2)$$

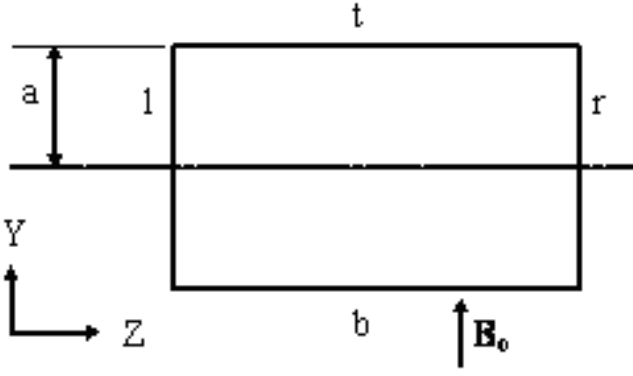


Figure 1: Schematic diagram of geometry.

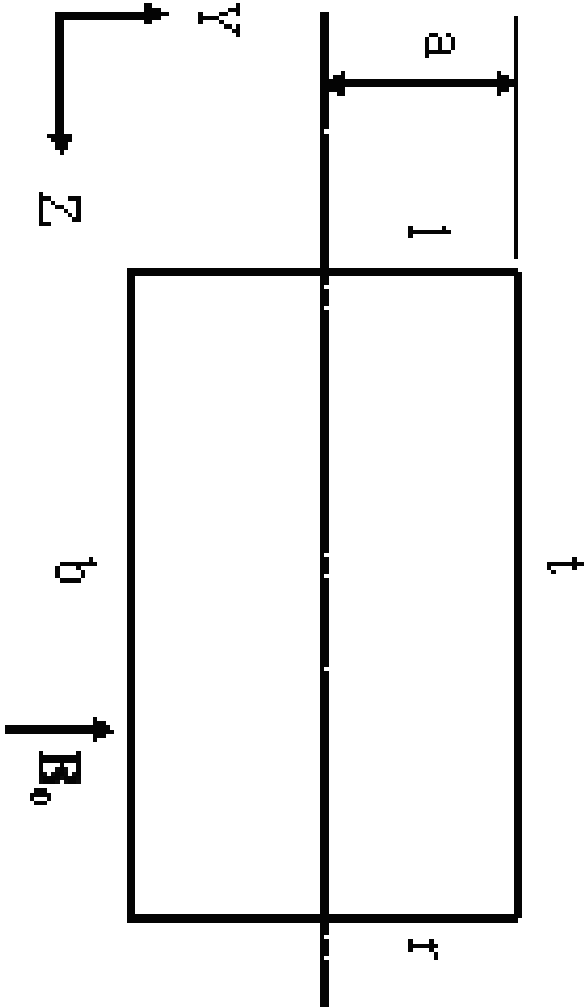


Figure 2: Rotated schematic diagram of geometry.

Table 1: Modelling conditions.

| CFD Run | ω | N_D | χ_a/χ_b | $\frac{a}{b_i}$ | Γ_a | Γ_b |
|---------|----------|-------|-----------------|-----------------|------------|------------|
| First a | | | | | | |
| AA01 | 0.0391 | 0.82 | 0.9469 | 0.041 | 203 | 0.123 |
| AA02 | 0.8741 | 0.553 | 0.9528 | 0.399 | 7215 | 0.283 |
| AA03 | 0.3654 | 0.958 | 0.5304 | 0.807 | 3049 | 0.35 |
| AA04 | 0.8548 | 0.203 | 0.817 | 0.332 | 561 | 0.556 |
| AA05 | 0.8676 | 0.215 | 0.7895 | 0.509 | 9207 | 0.123 |
| AA06 | 0.1763 | 0.409 | 0.0698 | 0.995 | 7991 | 0.123 |
| First b | | | | | | |
| BA11 | 0.9654 | 0.443 | 0.5503 | 0.927 | 9257 | 0.284 |
| BA12 | 0.6548 | 0.191 | 0.5146 | 0.337 | 3357 | 0.042 |
| BA13 | 0.9476 | 0.535 | 0.2801 | 0.939 | 9389 | 0.108 |
| BA14 | 0.3063 | 0.071 | 0.364 | 0.454 | 4534 | 0.896 |
| BA15 | 0.3982 | 0.091 | 0.9544 | 0.521 | 7331 | 0.911 |
| BA16 | 0.9734 | 0.161 | 0.0897 | 0.388 | 1144 | 0.144 |
| BA17 | 0.8912 | 0.123 | 0.4564 | 0.198 | 7744 | 0.912 |
| BA18 | 0.2312 | 0.723 | 0.0218 | 0.12 | 6612 | 0.893 |
| BA19 | 0.1243 | 0.107 | 0.849 | 1.289 | 2859 | 0.698 |

CONCLUSION

The conclusions are:

1. Trondheim is a nice city.
2. CFD is great fun, and useful too.

REFERENCES

- JAMES, T., YING, A.C. and JOHNSEN, S.G. (1988). "A new technique for producing stencils". *Proc. Int. Cong. on Stencils*. ABCD, Melbourne, Australia.
- LUKE, T. (1988). "A new technique for stencil publishing". *J. Stencils*, **5**, 179–221.

RESULTS

The results of using the \LaTeX template is a great looking paper. In Figures 1 and 2 it can be seen how figures are easily included. In Table 1 it is seen how we can include a table. The table is constructed in the file table.tex, where also the table caption and label are defined.

APPENDIX A

Give any additional information here.