



SG2224
Applied CFD
9 May 2016

Today



- Invited presentation from COMSOL by Mats Nigam
- Project:
 - Info
 - Questions
- Seminar 17 May
- Peer reviewing

Project workshop



- Fri 17 May, 13:15 – 17:30-ish
- 12 min/project: max 10 min presentation + questions
- All group members should stand in front.
- All group members should be prepared to answer all questions

- Report to be handed in (one paper copy + digital)
- Presentation on memory stick as backup (PowerPoint or pdf)
- Upload report and presentation on Bilda before 11:00

No e-mail with report or presentation!!!

Peer reviewing



- You will be dedicated a project to review
- Listen to the presentation and read the report
- Max half page containing:
 - Presentation (also report): Is it possible to understand the setup, mesh and results?
 - Quality and trust: Why do you trust the results presented?
 - Study: Are the results interesting and useful?
- Post at bilda as a reply to the project you are reviewing
- Due Sunday 22 May - 23:00

Grid refinement

- After grid refinement study
 - OK to run bulk computations on coarser grids
- Near-wall grid
 - Remember $y^+ = 5-20$ is the “problem area”. Try to avoid.
 - “Enhanced wall treatment”



Geometry

Rotation/translation of sub-objects?

- In sketching mode, choose a new coordinate system.
- Then, the system can be translated/rotated relative the other systems



Physical modelling

How to justify choice of modelling?

- In general you cannot justify chosen simplification without running a more complete model...
- Estimate, based on physical knowledge



Turbulence modelling

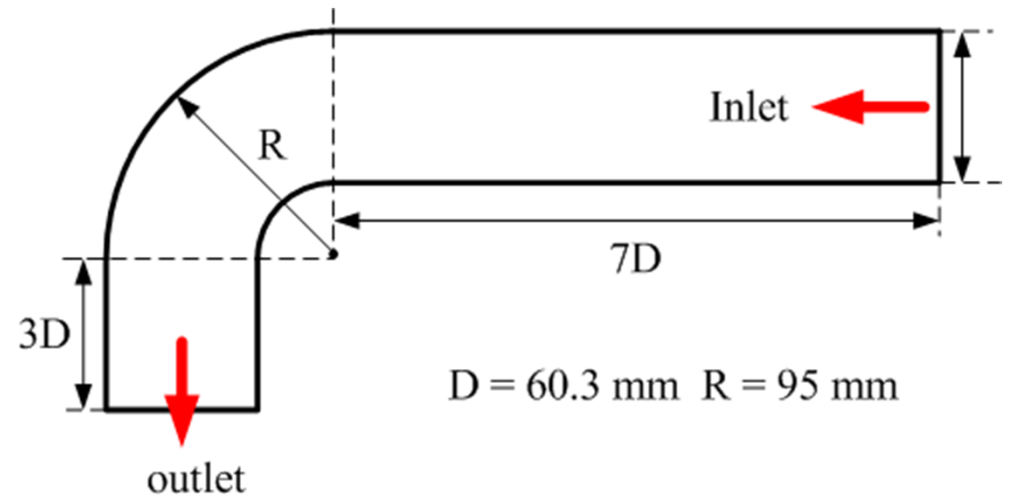
Choice of model?

- Swirl/rotation: EVM have problems – look for explicit rotation corrections or use full DRSM (RST)
- Among EVMs, Menter SST (also realizable k-eps) improve in stagnation regions and separated flows
- In Fluent, k-eps is robust (works most times), choose realizable



Outlet boundary conditions

- Sufficiently far away?



Parameter variations

How much to test?

- Check with project coordinator
- No need for a massive study – the principals are more important

