Hercules Task 2.2
Status and Progress, March 2006

General objective:

To develop numerical models on the formation of engine emissions

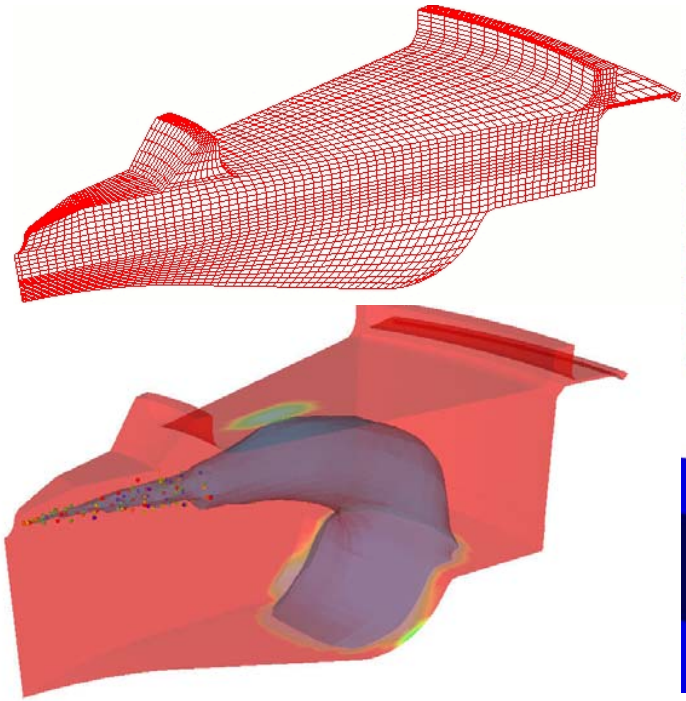
Detailed objectives:

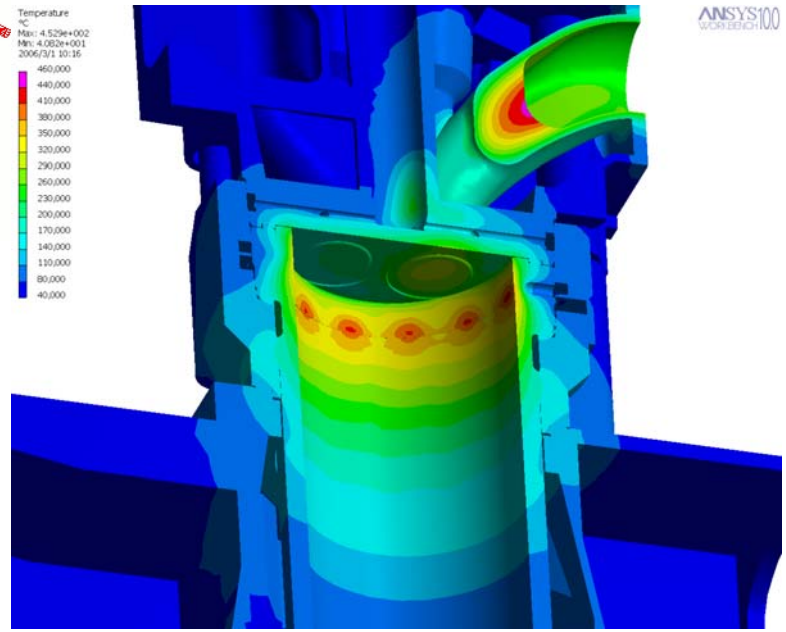
- Numerical description of in-cylinder flow
- Chemical description of combustion and emission formation
- Implementation and integration of sub-models
- Validation and evaluation against measurements
- Application to engine conditions

Partner: MAN B&W Diesel AG
Status and Progress

MBD-D
Augsburg

- CFD sub-model development completed
  - Development new one-component surrogate fuel models for MGO, MDF and HFO
  - Linking CFD-combustion simulation and FEM simulation for calculating thermal load of the combustion chamber components (self-developed data converter: AnsCo)





Partner: MAN B&W Diesel A/S
Status and Progress

MBD-DK
Copenhagen

- CFD model consolidated. Almost all code development finalized.
- Extensive validation run series:
  - 4T50ME-X, K98MC, S50MEC, S35MC
  - very low load to full load
  - Different fuel injection, (profiles and atomizers)
- Experimental work for validation in progress

4T50ME-X: Kiva vs. measurements

Load: 100 % 75% 50% 25%