Introduction to the methods of optimisation and parameterisation in fluid mechanics : an aid to design and conception

Agenda of November, the 15th 2005 and February, the 14th 2006

9h30 – 10h : Registration

Morning :

10h – 10h30
Introduction. The design in the industrial environment. The multi-physics approach

10h30 – 11h
Objective function mono or multi-objective optimisation, Pareto fronts

11h – 13h
Description of the different optimal design techniques

- Reverse differentiation methods
- Neural networks
- Genetic algorithms
- Gradients methods
- Adjoint methods
- Parameterisation methods

13h – 14h
Lunch. Discussion.

Afternoon :

14h – 15h
Design, robust design, advanced design.
Which objective? Which choice? Alternative or complementarity?

15h – 16h
Presentation of the parameterisation method and its couplings in an optimisation procedure

16h – 17h
Demonstrations and training based on the parameterisation software *Turb'Design*™ and *Turb'Opty*™

17h – 17h15
Conclusion, End of the session

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