

Prof. Fabio Nobile

Mathematics Institute of Computational Science and Engineering - MATHICSE

SEMINAR OF NUMERICAL ANALYSIS

➤ **WEDNESDAY 21 MAI 2014 - ROOM MA A3 30 - 16h15**

Dr. Claudia SCHILLINGS (ETHZ, SAM, Zürich / Switzerland) will present a seminar entitled:

“Optimal aerodynamic design under uncertainty”

Abstract:

The unavoidable presence of uncertainties poses several difficulties to the numerical treatment of optimization tasks. In this talk, we discuss a general framework attacking the additional computational complexity of the treatment of uncertainties within optimization problems. Appropriate measure of robustness and a proper treatment of constraints to reformulate the underlying deterministic shape optimization problem are investigated. In order to solve the resulting robust problems, we propose efficient discretization techniques of the probability space as well as algorithmic approaches based on multiple-setpoint ideas in combination with one-shot methods. Finally, numerical results considering optimal aerodynamic design under shape uncertainties will be presented.

Lausanne, 28 March 2014/FN/cr