

## Parameter estimation

Sooner or later serious modeling leads to the question of getting parameters. Very often it is not possible to obtain parameters by direct experiments. Then mathematical techniques have to be applied in order to solve the "inverse problem": adjust parameters in order to match simulation and experimental data.

From the beginning we were fully aware of the importance of integrated parameter identification. Consequently CiT solvers all include sophisticated and powerful estimation tools.

Since for Dr. Wulkow and Dr. Telgmann this field is also of particular scientific interest, the applied techniques are state-of-the-art, partly new developed in research projects. The experience of more than 10 years has led to software, where an open number of parameters may be fitted versus large numbers of experiments with open number of sensors. The whole identification process is supported by automatic scaling, user-defined weighting, additional mathematical analyses, export of results and graphics to spreadsheets.

Parameter estimation should not be considered as a black box. For modelers, it would be the worst case to obtain wrong parameters. CiT parameter estimation informs users, if results may be optimal but are not unique.

CiT's parameter estimation tools have been applied to industrial and academic projects in all those fields where simulation and modelling has been done.