

Support Vector Machines

**DATA ANALYSIS SOLUTIONS
DA-SOL GmbH**

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SUPPORT VECTOR MACHINES: NON-LINEAR MODELLING MADE EASY

Introductory Course

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Although traditional chemometric methods constitute a cornerstone for the analysis of process data, they sometimes turn out to be insufficient for modelling complex, possibly non-linear dependencies. Going beyond those simple approaches used to be difficult, time-consuming and required a rather large amount of training examples. With the advent of support vector machines and kernel methods, non-linear modelling has become rather simple and their origin from statistical learning theory for the first time puts the emphasis on efficient learning from limited training examples. Moreover, they provide an ideal approach for handling complex multivariate data with many independently varying parameters such as in-process control data or analytic measurements on complex mixtures.

This introductory course will provide a simple and intuitive understanding of this exciting new field and will enable participants to profit from this powerful toolset in their own projects:

- SVM classification for achieving optimal discrimination
- Support vector regression for an accurate prediction of non-linear dependencies
- Support vector domain description for precise modelling of complex process trajectories and advanced outlier rejection

Audience: No prior knowledge of support vector machines is required, although a basic familiarity with chemometric methods and concepts would be beneficial.

About: Data Analysis Solutions is a services & consulting company helping its clients to make the most out of their data through smart, tailored analysis solutions. It is based on more than 12 years of experience of its founder, Dr. Juergen von Frese, in industrial chemometrics and bioinformatics. He has given numerous talks and industrial courses all over Europe. One of his main focus areas has been on support vector machines and he has used them successfully in numerous large scale industry projects.