Support Vector Machines Made Easy

DATA ANALYSIS SOLUTIONS
DA-SOL GmbH

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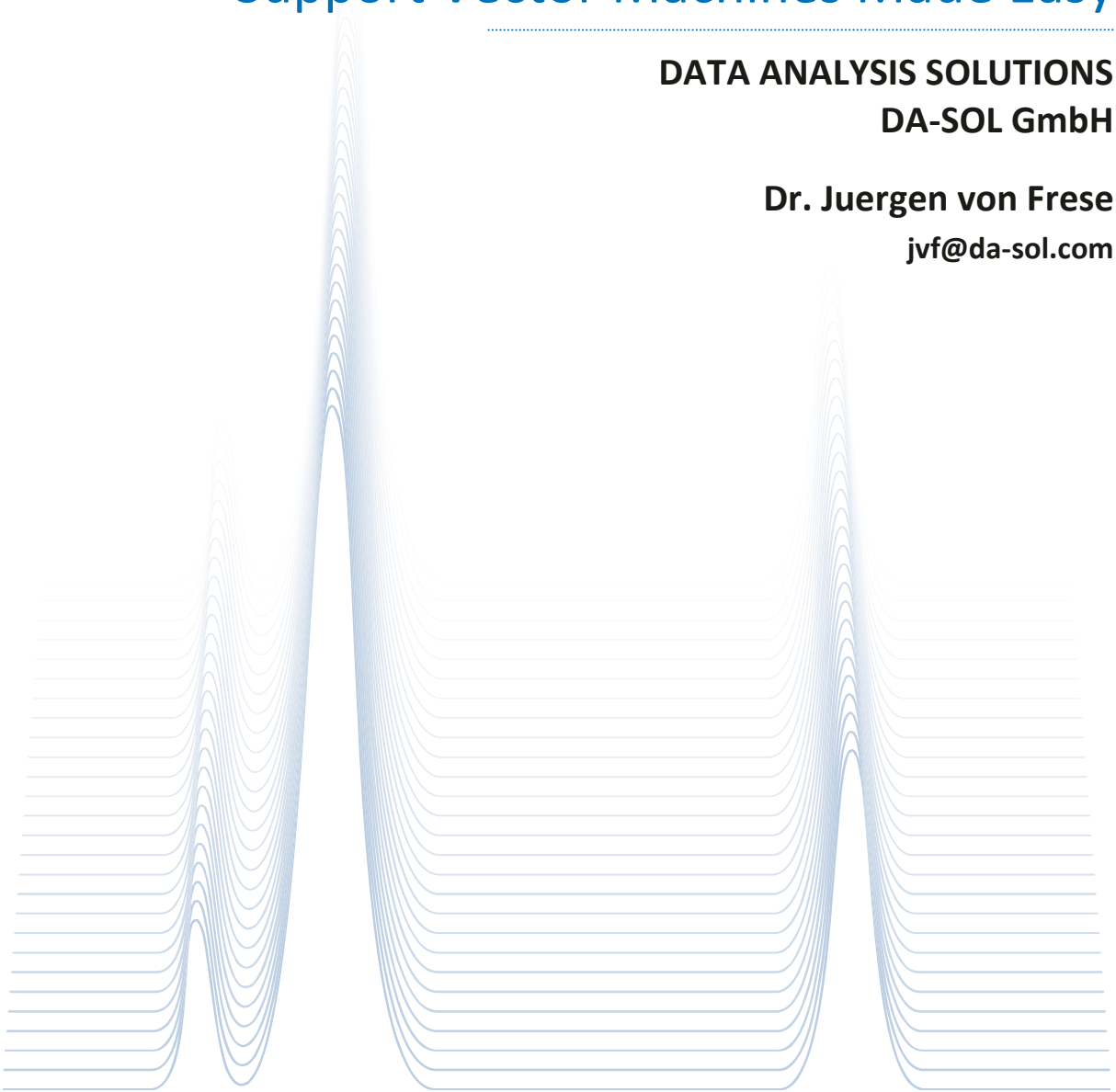

SUPPORT VECTOR MACHINES MADE EASY

Introductory Half-Day Course

XIII Chemometrics in Analytical Chemistry, Budapest, 25.06.2012

Latent variable approaches (PCA, PLS) have been a mainstay for most chemometric analyses. But new kinds of data, in particular omics data or comprehensive process data often contain dozens or hundreds of independent sources of systematic variation and can therefore not be modelled adequately with a few latent variables. Non-linear modelling has often been performed using neural network approaches, requiring both large sample sizes as well as a tedious and unreliable optimization process.
In both cases Support Vector Machines (SVM) provide an ideal tool for obtaining powerful prediction models. Due to their origin in statistical learning theory, they focus on optimal prediction capabilities for future samples based on a limited training set. Non-linear kernels provide a straightforward, reproducible access to optimal non-linear models supported by good modelling diagnostics.

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 a precise novelty or counterfeiting detection and 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 14 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 and in the U.S. One of his main focus areas has been on support vector machines and he has used them successfully in numerous large scale industry projects.