

Invited Speech:

O2PLS for Improved Analysis and Visualization of Complex Data



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About the Speaker

Dr. Lennart Eriksson joined Umetrics AB in 1994, and has worked with design of experiments (DOE) and multivariate data analysis (MVDA) for 25 years. His formal training includes a Ph. D. in organic chemistry and chemometrics at Umeå University, and he is affiliated to Umeå University as Associate Professor in Chemometrics. Lennart is a member of the Editorial Board of Journal of Chemometrics. He has lectured over 200 business courses in DOE and MVDA and has co-authored over 100 publications on these subjects.

Abstract

With the increasing availability of different process analyzers and sensors, multiple data sources are commonly available and this will impose new challenges and enable new types of information-extraction possibilities in data mining of complex process data.

The ability to separate joint and unique, and maybe even redundant, information in data organized as multiple blocks or data bases will be of increasing importance. This enables a detailed assessment of both the joint and the unique variations in the respective datasets, and eventually a deeper understanding of the entire process or system.

In this contribution we discuss a modification of the classical PLS method, denoted O2PLS. The primary objective of O2PLS is integration of data in the two-block (X/Y) context and understanding of which information overlaps between the two data tables and which information is unique to a specific data table.