

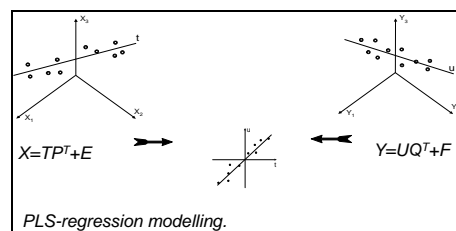
MULTICON:

Multivariate control of quality and process.

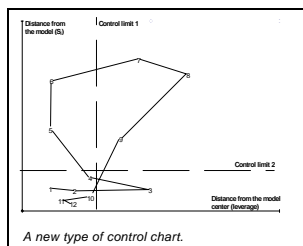
Presentation at the EUREKA Environmental Monitoring Brokerage Event (EMBE) in Manchester, U.K., November 20-22, 1996.

MULTICON is an EUREKA project (EU 1444), realised jointly by Bergström & Öberg, the main participant, and CAMO A/S in Norway. Commercial partners are sought.

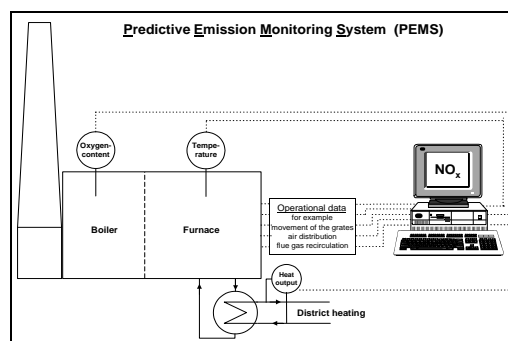
The objective of the MULTICON project is to develop methodology and software for the use of **multivariate techniques for on-line process and quality control**. The mathematical/statistical techniques used, are bilinear compression methods like principal component analysis and PLS-regression.



In today's industrial processes sensors and instruments records an enormous amount of data. Generally this increased flow of data is not used efficiently, and because of the complexity each variable is treated separately. Measurement data from industrial processes however shows a significant amount of covariation. The information contained in the many different individual variables can therefore be compressed and displayed with only a few new linear combinations of these. New data projected onto the latent variables can subsequently be used for **status monitoring, fault detection and predictions**.



Among the first practical solutions now being developed are **predictive emission monitoring systems** (PEMS) for nitrogen oxides. These systems can be used instead of direct monitoring. PEMS can also be used to replace signals from any existing instrument, in the case of disturbances or signal failures. Bergström & Öberg has been assigned by the Swedish EPA to develop suitable recommended guidelines for the use of these models.



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