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## Abstracts of Short Communications and Posters

### Section:

## 12. Probability and Statistics

1991 MS Classification: 62

Mucha, Hans-Joachim, Weierstrass Institute for Applied Analysis and Stochastics (WIAS), Berlin, Germany

**Classification based on adaptive distances**

Data-based metrics can improve the performance of cluster analysis techniques even in cases of clustering data over a continuous high-dimensional space. Usually these approximative (or adaptive) metrics are estimated in an iterative manner because no information about clusters is available. By the way these adaptive distances are suitable for visualizing high-dimensional data in two or three dimensions (Mucha 1992).

In the case of a classification problem, where both the classes and the number of classes are known beforehand, the main aim is to derive decision rules for classifying unseen observations into the given classes. A new approach based on local adaptive distances is recommended in order to derive a stable classifier. Here harder to classify observations get increasingly larger weights. Successful applications will be presented.

Reference:

H. -J. Mucha, Clusteranalyse mit Mikrocomputern, *Akademie Verlag, Berlin* (1992).

H. -J. Mucha, Distance based credit scoring, In: *Classification and multivariate graphics: models, software and applications, WIAS-Report No.* **10** (1996), 69–76.