Very High Dimensional Semiparametric Models

Organised by
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Abstract. Very high dimensional semiparametric models play a major role in many areas, in particular in signal detection problems when sparse signals or sparse events are hidden among high dimensional noise. Concrete examples are genomic studies in biostatistics or imaging problems. In a broad context all kind of statistical inference and model selection problems were discussed for high dimensional data.


Introduction by the Organisers

The workshop Very High Dimensional Semiparametric Models, organised by Arnold Janssen (Düsseldorf), Aad W. van der Vaart (Amsterdam) and Jon A. Wellner (Seattle) was held October 2nd– October 8th, 2011. It was well attended with 52 participants from 11 countries from different continents. This workshop was a nice blend of researchers with various statistical backgrounds. The talks covered a broad spectrum from modern statistical theory for very high dimensional problems. During the week 27 talks were given including 5 extended morning talks about outstanding topics. Throughout much time was spent for long and lively discussions. Special topics were:

• The sparsity in high dimensions with applications in medicine, biology and astronomy.
- Bayesian methods and reduction of dimension including regularisation methods, computation and penalty functions for estimation problems.

- Qualitative assumptions about monotonicity and convexity.

- Beyond the parametric boundary topics about estimation and the bias-variance trade-off.

It was also very successful to bring more applied researchers together with colleagues from mathematical statistics. This combination was very stimulating for further research and discussion. In particular a lot of young researchers attended the conference. The meeting was a great success. As always the stimulating atmosphere of the Forschungsinstitut led to an extensive exchange of ideas. A lot of new scientific contacts were formed, initiating quite a number of collaborations.
**Workshop: Very High Dimensional Semiparametric Models**

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