Propositions

accompanying the dissertation

Inverse problem on Imaging and Imaging System

The study of coherence, aberration, and optimization

by

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1. The design of the error function (and the proper regularization) is the most crucial step for any optimization problem.
2. Quantitatively analyzing the performance of an optimization problem is almost an impossible mission.
3. Instead of inventing a global optimization method, it is more practical to create a situation based on experience in which local minimum is good enough.
4. The degradation of coherence does not necessarily decrease the resolution but rather the field-of-view when using a proper imaging method. (This proposition pertains to this dissertation.)
5. In the foreseeable future, we still will not be able to make full use of high dimensional optical data, even though we already have the measurement ability. (This proposition pertains to this dissertation.)
6. A successful method for high dimensional optical data measurement relies on both high speed data acquisition and data analysis schemes. The former is usually more difficult to achieve than the later.
7. The algorithm and the data used to validate it are inseparable. Lacking any of the two may cause the result to be irreproducible.
8. People often tend to reinvent knowledge instead of searching thoroughly in the literature. However, it is increasingly difficult to follow the development of research due to the explosive increase of the number of publications.
9. The key of education is to find the balance between discipline and freedom, which determines the lower and the upper bound of the achievement of a student, respectively.
10. A bureaucratic system focuses more on the processes than on the results as if the proper execution of the process naturally guarantees the result.

These propositions are regarded as opposable and defendable, and have been approved as such by the promotor Prof.dr. H.P. Urbach.