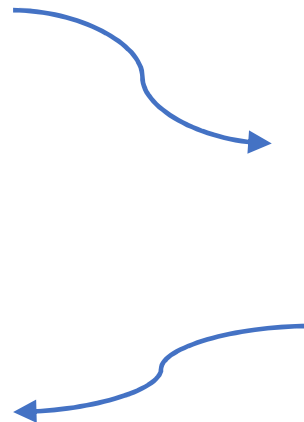


Mathematisch Instituut

Techniques

- (Bayesian) statistics
 - Data assimilation
- Statistical learning
- Algorithms
- PDEs
- Probability, statistical physics
- Simulation



Subject matter

- Genomics
- Metabolomics
- Drug diffusion in brain
 - Angiogenesis
- Desertification, ecology
 - Causality
- Epidemiology
- Tomography
- Transport and signaling in plants
 - Circadian rhythm
- Psychometrics
 - Networks
- Cosmology

Data Theory

50 % MI + 50 % Instituut Psychologie (FSW) in het kader van LUCS

*Distance driven machine intelligence
in particular machine learning techniques for prediction and classification*

Psychology, sociology, political sciences, pedagogy, criminology, epidemiology, health sciences, biology

- questionnaires, population censuses, physiological measurements, psychological tests or reaction times
 - imaging (EEG, fMRI, PET), omics, eye-tracking, wearables, diaries, internet, social media

- Description of relationships in high-dimensional data using distances and geometry
 - Dimension reduction based on geometry
 - Optimal transformation of data
- Optimization by minimizing loss functions through dedicated algorithms
 - Statistical methods for stability, generalization and model selection
 - Efficient algorithms