

## **Automatic Configuration of Fast Automated Multi-Objective Treatment Planning in Radiotherapy**

1. For prostate and head and neck cancer, automatic configuration of the reference point method (RPM) and lexicographic reference point method (LRPM) for automated treatment planning is feasible. (this thesis)
2. Automating the configuration of a system for automated treatment planning can avoid large manual workload. (this thesis)
3. For prostate and head and neck automated IMRT treatment planning, the plans generated with the RPM and LRPM are dosimetrically similar or more favourable than those generated with the clinically used system. (this thesis)
4. Automatic generation of high-quality IMRT treatment plans with the RPM and LRPM can greatly reduce the computation time as it is independent of the number of objective functions. (this thesis)
5. The RPM for fast automated treatment planning is a major step towards clinical introduction of (online) adaptive treatment planning in both IMRT and IMPT. (this thesis)
6. For the patient's outcome, treatment with a plan that lacks Pareto optimality may be more favourable than treatment with a Pareto-optimal plan.
7. A high-quality treatment plan starts with high-quality imaging and contouring.
8. Visualising each part of an algorithm is often key to formulate it.
9. Artificial intelligence has the potential to improve healthcare, but only if used intelligently.
10. When a measure becomes a target, it ceases to be a good measure. (Goodhart's law)
11. It is not knowledge, but the act of learning, not possession but the act of getting there, which grants the greatest enjoyment. (Carl Friedrich Gauss)