

**Dagstuhl Seminar 23361**  
**Multiobjective Optimization on a Budget**  
**Program – Monday, September 4, 2023**

**09:00 – 10:30: Welcome Session**

- Welcome and introduction
- Short presentation of all participants (2 minutes each!)

**Coffee Break**

**11:00 – 12:00: Seminar Overview**

- Seminar scope
- Offers-and-needs market

**Lunch**

**14:00 – 15:30: Modelling to Address Budget Constraints**

- Juliane Mueller: Surrogate model guided optimization of expensive black-box multiobjective problems
- Andrea Raith: Problem decomposition in biobjective optimization

**Coffee Break**

**16:00 – 16:30: Group Formation**

**16:30 – 18:00: Working Groups**

**Dinner**

**Dagstuhl Seminar 23361**  
**Multiobjective Optimization on a Budget**  
**Program – Tuesday, September 5, 2023**

**09:00 – 09:30: Reporting on Large Working Groups**      Chair: Matthias Ehrgott

**09:30 – 10:30: Small Working Groups**

**Coffee Break**

**11:00 – 12:00: Heuristic Optimization and Human Involvement**      Chair: Jürgen Branke

- Thomas Bäck: How to help end users when the budget is limited?
- Robin Purshouse: Towards decision analytic workflows for real-world problems: Simulation model calibration and multi-objective optimization on a shared evaluation budget
- Benjamin Doerr: Runtime analysis for the NSGA-II
- Kaisa Miettinen: Perspectives to dealing with computationally expensive multiobjective optimization problems

**Lunch**

**14:00 – 15:30: Small Working Groups**

**Coffee Break**

**16:00 – 17:00: Small Working Groups**

**17:00 – 18:00: Reporting from Small Working Groups**

- General discussion

**Dagstuhl Seminar 23361**  
**Multiobjective Optimization on a Budget**  
**Program – Wednesday, September 6, 2023**

**09:00 – 10:30: Small Working Groups**

**Coffee Break**

**11:00 – 12:00: Approximation and Exact Methods**      Chair: Karl-Heinz Küfer

- Kathrin Klamroth: Objective space methods: Pareto front approximations on a budget
- Michael Stiglmayr: Multi-objective branch-and-bound on a budget
- Frank Neumann: Fast Pareto optimization using sliding window selection
- Alma Rahat: Efficient approximation of expected hypervolume improvement using Gauss-Hermite quadrature

**12:00-12:15: Group Photo Outside**

**Lunch**

**13:30 – 15:30: Hiking Trip**

**Coffee Break**

**16:00 – 18:00: Small Working Groups**

**Dagstuhl Seminar 23361**  
**Multiobjective Optimization on a Budget**  
**Program – Thursday, September 7, 2023**

**09:00 – 10:00: Reporting from Small Working Groups**      Chair: Kaisa Miettinen

**Coffee Break**

**10:30 – 12:00: Small Working Groups**

**Lunch**

**14:00 – 15:30: Small Working Groups**

**Coffee Break**

**16:00 – 16:30: Graphical and probabilistic approaches**      Chair: Boris Naujoks

- Ralph Steuer: A visualization-aided approach for solving tri-criterion portfolio problems
- Hao Wang and Kaifeng Yang: Probability of “improvement” in multi-objective Bayesian optimization

**16:30 – 17:00: Announcements**

**17:00 – 18:00: Joint session with DS22362**

**20:00 – 23:00: Informal Get Together (BYOB, meet in the cafeteria)**

**Dagstuhl Seminar 23361**  
**Multiobjective Optimization on a Budget**  
**Program – Friday, September 8, 2023**

**09:00 – 10:30: Final Reporting from Working Groups**

**Coffee Break**

**11:00 – 12:00: Closing Session**

**Lunch**