Combinatorial Optimization at Work, NIMS 일정

일자	시간	내용
3/23	13:30~17:00	❍ Opening Remarks & short presentation ❍ Thorsten Koch (ZIB) 　• **An application driven approach to OR: the ZIB perspective** 　• **How to Survive Industry Projects as a Mathematician**
3/24	09:30~17:00	❍ Thorsten Koch (ZIB) 　• **SCIP: Past, Present, and Future** ❍ Robert Schwarz, Jakob Witzig (ZIB) 　• **Introduction to MIP modeling with Zimpl** 　　- Linear Programming and geometric interpretation (diet problem) 　　- Integer Variables 　　- Modeling tricks (logical constraints, absolute value, max/min) 　　- Tour of Zimpl features and syntax 　　- Examples in Zimpl "playground" (in browser) 　• **Tour of Applications with Zimpl Exercises** 　　- Assignment Problem 　　- Sudoku 　　- Shortest Path 　　- Minimum Spanning Tree 　　- Steiner Tree Problem in Graphs 　　- Minimum Cost Network Flow 　　- (Sparse) Binary Classification 　• **The Traveling Salesman Problem** 　　- Comparison of model formulations 　　- Separation of subtour elimination constraints 　　- Primal heuristics (construction, improvement)
3/25	09:30~15:00	❍ Thorsten Koch (ZIB) 　• **From Simulation to Optimization:** 　**Mixed Integer Nonlinear Programs for Gas Network Optimization** ❍ Robert Schwarz (ZIB) 　• **Evaluating and Extending the Capacity of Gas Networks** 　　- Model for balanced flow situations from capacity contracts 　　- Estimating demand from historical data 　　- Network expansion measures ❍ Jakob Witzig (ZIB) 　• **Reoptimization for MIPs** 　　- Branch-and-Bound trees 　　- An application in elevator control