Applications and Solution of Linear Ordering Problems

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Abstract: The Linear Ordering Problem (LOP) is defined as follows. We have n objects to place in order. If we place object i before object j, we incur a cost c(i,j). The task is to choose the ordering that minimizes the total cost. In the first half of this talk, we survey various applications of the LOP, such as the triangulation problem of input-output tables in economics and the aggregation of individual preferences within different contexts.

An example of the latter application is the ranking of teams in sports, when each team plays every other team. In the second half of the talk, we study the problem of solving the LOP to proven optimality.

Bio: Hanna is a research associate in the Institute of Computer Science at the University of Heidelberg. She holds a diploma in mathematics and is doing a Ph.D. at the Discrete Optimization group at the Faculty of Mathematics and Computer Science in Heidelberg. Her research interests include the exact sulution of combinatorial optimization problems such as Linear Arrangement and Linear Ordering Problems.