

## On the Facial Structure of the Replacement Polytope

**Andréasson, Niclas** (*Chalmers University of Technology, Sweden*)

Consider a system consisting of a finite number of parts, each with a specific lifetime. At the very latest when a part reaches its lifetime it must be replaced. Associated with a replacement is the cost of the part and a fixed cost independent of how many parts that are replaced. The replacement problem refers to finding a replacement schedule that minimizes the total cost for having a working system a finite time period. An integer linear program is presented for the replacement problem. The facial structure of the convex hull of the set of feasible solutions (the replacement polytope) is then investigated.