



Minisymposium 1 - Discrete Optimization

Optimization for agriculture

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In many regions farmers cultivate a number of small lots that are distributed over a wider area. This leads to high overhead costs and economically prohibits use of high tech machinery hence results in a non-favorable cost-structure of production. The classical form of land consolidation is typically too expensive and too rigid, whence consolidation based on lend-lease agreements has been suggested. In order to exploit the potential of this method specific mathematical optimization algorithms have to be developed that use many ideas from different mathematical areas. E.g., one approach leads to a quadratic optimization model that can be approximately solved by means of the theory of convex bodies. In subroutines Hadamard matrices are required to create mixed integer linear programs whose "good nature" can be proved by a careful analysis of the simplex algorithm.