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Optimization for an Exaust Emission Problem by the Simplex Method
- A Report on Work from the Automotive Industry Industry -

The rapidly decreasing mineral resources make the manufacturers of automobiles to construct engines with as low consumption as possible.
On the other hand, the growing consciousness of environment led many countries to fix upper limits for the pollutants, by law.
Laying out the engine for minimal consumption only, in many cases the emission of pollutants is so high that the legal upper limits cannot be met. Therefore, the task consists in determining the minimal consumption of fuel subject to the upper limits for the pollutants.
The mathematical model is set up leading to a separable piecewise linear convex optimization problem, which allows the application of the Simplex method.
Results of the calculation are presented and discussed.

Reference: L. Kohaupt, Optimization for Exaust Emission Problems by the Simplex Method, ZOR, Teil B: Praxis, 32 (1988) 323-345