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A penalized method for multivariate concave least squares with application to productivity analysis

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Highlights

- A concave least squares problem has $O(n^2)$ constraints that is very difficult to solve.
- A penalization method for concave least squares problem is proposed.
- The penalized method is formulated as a non-negative unconstrained QP.
- The reformulated QP is solved much faster than the original problem.
- The dual of the reformulated problem is a separable QP and has a superior computational performance.
- Matlab and R codes for solving the reformulated problem and its dual are presented.

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