Pseudo code

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4 step algorithm

Input: $\lambda_0 > \lambda_1 > \cdots > \lambda_K$.

Initialize: $\mathcal{A}(\lambda_0) = \varnothing$. $k = 1$

While $k \leq K$:

1. Set $\mathcal{E} = \mathcal{A}(\lambda_k) \leftarrow \mathcal{A}(\lambda_{k-1})$.
2. Solve the problem on groups in $\mathcal{E}$.
3. Strong rule checks
    a. Compute $\mathcal{S}(\lambda_k)$. Automatically include all groups in $\mathcal{E}$.
    b. Check KKT conditions on all groups in $\mathcal{S}(\lambda_k) \setminus \mathcal{E}$.
    c. If violators, add them to $\mathcal{E}$ and go to 2. Otherwise proceed.
4. Final KKT check
    a. Check KKT conditions on all groups.
    b. If violators, add them to $\mathcal{A}(\lambda_k)$ and to $\mathcal{E}$. Go to 2.
    c. If no violators, increment $k \leftarrow k + 1$ and return to 1.