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A Branch-and-Price algorithm for stable workforce assignments with hierarchical skills

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Highlights

- A real-life problem of finding stable workforce assignments is studied.
- A new and compact IP model is developed.
- The problem is reformulated as an IP model with set packing structure, and Column Generation is employed.
- The pricing problem amounts to finding a team with replacement weight coefficients in objective
- Stability is used in reducing the problem size after branching decisions.
- The Branch-and-Price has significantly increased the instance size that can be solved within a given time limit.

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