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Colocating tasks in data centers using a side-effects performance model

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Highlights

- The side-effects performance model characterizes data center tasks by size and type
- We optimize utilitarian performance using the side-effects model
- An efficient allocation orders tasks by sizes (separately for each type)
- Even for unit-size tasks, the problem is strongly NP-hard
- For constant number of types, we show exact, approximate and heuristic algorithms

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