The Stable Scheduling (or Ordinal Transportation) Problem

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The "stable scheduling (or ordinal transportation) problem" generalizes the 0,1 stable matching problems (one-to-one, one-to-many, and many-to-many) to the allocation of real valued hours or quantities.

A strongly polynomial algorithm proves the existence of "stable schedules." All allocations of stable schedules to an individual agent are shown to be comparable by a "min-min" criterion.

The set of all stable schedules is shown to be a distributive lattice in general —with the collective partial order of the agents on one side of the market in direct opposition to those on the other side of the market— but in the generic "nondegenerate" case it is a complete linear order.

A simple algorithm finds the "optimal" stable schedules for the agents on each side of the market given any stable schedule (and in the generic case it finds all stable schedules).