

Group incentives in airport rescheduling problems

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Abstract

We consider the problem of reassigning flights to arrival slots of an airport during inclement weather. In this problem, Schummer and Abizada (2013) design new rules based on the deferred acceptance algorithm of Gale and Shapley (1962) and show that these rules are strategy-proof. We extend this positive result by showing that the rules are in fact group strategy-proof. We also discuss improvements of other rules studied by Schummer and Vohra (2013). We show that the Compression algorithm, which is currently employed by the Federal Aviation Administration, becomes non-manipulable via flight cancellations.

Keywords: Market design, Matching, Ground Delay Program, Group strategy-proofness, Deferred acceptance algorithm, Top trading cycle algorithm.