

## عنوان مقاله:

Cockpit Crew Pairing Problem in Airline Scheduling: Shortest Path with Resources Constraints Approach

## محل انتشار:

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## خلاصه مقاله:

Increasing competition in the air transport market has intensified active airlines' efforts to keep their market share by attaching due importance to cost management aimed at reduced final prices. Crew costs are second only to fuel costs on the cost list of airline companies. So, this paper attempts to investigate the cockpit crew pairing problem. The set partitioning problem has been used for modelling the problem at hand and, because it is classified in large scale problems, the column generation approach has been used to solve LP relaxation of the set partitioning model. Our focus will be on solving the column generation sub-problem. For this purpose, two algorithms, named SPRCF and SPRCD, have been developed based on the shortest path with resource constraint algorithms. Their efficiency in solving some problem instances has been tested and the results have been compared with those of an algorithm for crew pairing problem reported in the literature. Results indicate the high efficiency of the proposed algorithms in solving problem instances with up to 632 flight legs in a reasonable time.

## کلمات کلیدی:

Airline scheduling, Crew pairing, set partitioning, Column generation, Shortest path with resource constraints

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/281434>

