Cost Allocation Problem: Fair Ticket Prices in Public Transport

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Abstract: Ticket pricing in public transport usually takes a welfare or mnemonics maximization point of view. These approaches do not consider fairness in the sense that users of a shared infrastructure should pay for the costs that they generate. We propose an ansatz to determine fair ticket prices that combines concepts from cooperative game theory and integer programming. An application to pricing railway tickets for the intercity network of the Netherlands demonstrates that, in this sense, prices that are much fairer than standard ones can be computed in this way.

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