

**Optimization System of Reserved/Non-Reserved Seating Plans
for Improving Convenience and Revenue of Inter-city Express Trains**

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Seating plans of reserved/non-reserved seats on inter-city express trains do not necessarily correspond to passenger demands which may vary depending on many factors such as calendar days and operating sections. This mismatch possibly causes passengers' inconvenience due to the congestion which they experience on board and the revenue loss which railway operators can suffer. Optimizing seating plans is expected to be an effective solution for these problems, in which predicting both the potential passenger demands and effect of reflection of passengers who are confronted with the congestion is necessary. We established models representing them and developed a prototype of the seating plans optimization system incorporating these models. As a result of a case study, we got an optimized seating plan which is expected to improve both of the passengers' convenience and the railway operators' revenue.