Developing a System Supporting Extra Train Planning for Long-Distance Rail Services

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   To provide efficient transport services, a plan for the daily operation of extra trains must be established based on accurate daily/hourly predictions of passenger demand fluctuation. Therefore, we constructed a method to forecast the daily/half-hourly demand fluctuation on a certain day in the future. Then, we developed an extra train operation planning system which implements the forecasting method. The system can estimate the load factor of all trains between stations on the planning schedule and suggest an optimal extra train operation plan. We have confirmed that the system can estimate the load factor with high accuracy.