

**Quantitative Evaluation of Earthquake Countermeasure Effects
Focusing on Lost Transportation Volume of Railway Networks**

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To improve railway resilience against an earthquake, we verified and applied a developed support system to evaluate the earthquake countermeasure effects focusing on the lost transportation volume of the railway networks. The system calculates the recovery process of the transportation volume that decreased after an earthquake, by optimization calculation so that the lost transportation volume is minimized. This makes us to quantitatively evaluate the effect of countermeasures. In addition, a different recovery process can be relatively evaluated. In this study, first we evaluate the performance of the system based on past earthquakes. Then comprehensively compare the effects of countermeasure such as structural and operational. And we quantify the achievement of anti-catastrophe performance. The evaluated recovery process of the lost transportation volume with the developed system is useful to implement strategic earthquake countermeasures.