



Seismic Vulnerability Functions of Railway Structures for Different Geomorphologic Conditions Derived from Damage Survey Data

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ABSTRACT: The damage survey data of railway structures in the 1978 Miyagi-ken Oki earthquake, the 1995 Hyogo-ken Nanbu earthquake, and the 2004 Niigata-ken Chuetsu earthquake are collected and compiled. The seismic vulnerability functions of railway structures for different geomorphologic conditions are constructed in the range of the JMA seismic intensity 4 to 7. The results indicate that the railway structure damage appears from the JMA seismic intensity 5+ and that the damage is higher at mountain, hill or valley plane.

Key Words: Railway Structures, Seismic Intensity, Vulnerability Function, Geomorphologic Classification, Mesh Map