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ANALYSYS ON FAILURE MODES OF ROAD STRUCTURES DUE TO THE SLOPE FAILURES IN THE 2008 IWATE-MIYAGI EARTHQUAKE AND DEVELOPMENT OF THE RELATED DAMAGE FUNCTION

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ABSTRACT: The failures of the road infrastructures due to a slope failure during an earthquake such as the 2008 Iwate-Miyagi earthquake and 2008 China Wenchuan earthquake are issued. The induced slope failures cause the various failure modes of road structures. We classified the failure modes of a road structure due to the slope failure by analyzing the 196 database on the damage of road structures in the 2008 Iwate-Miyagi earthquake from the view point of the geological features and the distance from the hypocenter. In addition, based on the analysis for total 531 database on the damage of the road structures, the related damage functions by peak ground acceleration and peak ground velocity are developed.

Key Words: 2008 Iwate-Miyagi earthquake, slope failure, road structure