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**SEISMIC RESPONSE OF UNDERGROUND REINFORCED  
CONCRETE STRUCTURE**

—CENTRIFUGE MODEL TEST AND ITS ANALYSIS—

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A centrifuge model test with similitude of 1/20 is carried out to clarify the inelastic response characteristics of reinforced concrete members in the culvert type of underground structure. Numerical analysis simulating the centrifuge model test is carried out to confirm the applicability of numerical procedure considering the material non-linearity. It is concluded that the reinforced concrete member in miniature is similar to the actual member in mechanical properties and yielding of reinforcing bars was found in the centrifuge model test under the applied strong motions. The present numerical procedure had the possibility of predicting the inelastic response of soil-structure interaction during strong earthquakes.

**Key Words:** centrifuge model test, underground structure, seismic response, numerical analysis

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