Evaluation for Seismic Performance of Embankments Considering Their Damage Process

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In the current design standard of railway structures, the settlement of embankments during earthquakes is evaluated by the Newmark's sliding block method which is based on circular slip failure. However, it has become apparent that the actual damage process of embankments cannot always be accurately reproduced by the method. In this study, we first attempt to clarify the damage process of embankments during earthquakes by centrifuge shaking table tests. Secondly, we propose a response value calculation method that can reproduce the damage process of embankments observed in the centrifuge tests. Finally, a performance verification method for embankments is proposed based on the above knowledges.