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Author: Keyword:

Search

[ADVANCED](#)
[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(1129K\)\]](#) [\[References\]](#)
A STUDY ON SEISMIC ANALYSIS METHODS IN THE CROSS SECTION OF UNDERGROUND STRUCTURES USING STATIC FINITE ELEMENT METHOD
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Based on the dynamic substructure technique, the author proposes a static seismic analysis method, the Ground Response Method, for underground structures modeled on the structure and surrounding soil that is expressed using finite elements. By comparing existing static seismic analysis methods, it is verified that the Ground Response Acceleration Method for Buried Structures provides results almost equivalent to those obtained from the Ground Response Method. However, the FEM Seismic Deformation Method yields different results. Thus, the author proposes a new seismic load that is equivalent to seismic ground strains and modifies the FEM Seismic Deformation Method.

Key Words: underground structure, seismic design, substructure method, static finite element method, seismic load


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