# Title: Seismic Analysis of Metro Stations

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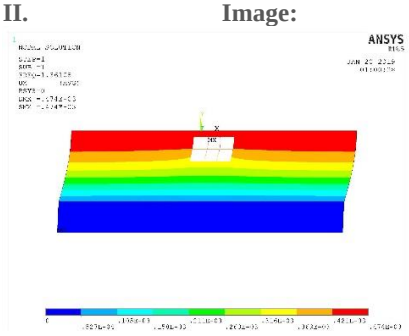
**Keywords:**

## I. Abstract Body (up to 300 words)

Underground structures are the indispensable part of the modern infrastructure. In general, underground structures have lower earthquake risk as compared to surface structures. However, dynamic behaviors of underground structures were observed during some past earthquakes and numerous significant damages are noticed to some underground structures amid the past seismic tremors. Consequently, seismic analysis and seismic design ought not to be overlooked, the design of these structures has to consider seismic loading. Underground structures have their distinct features, like their entire enclosure inside the ground (soil or rock), significant length (in case of tunnels) and so on. Because of which Seismic conduct of the underground structures is really unique from any other surface structures. For underground structures, seismic loading is characterized in terms of deformations imposed by the soil on the structures and the interaction between them. Metro Stations are large dimension underground structures. The relative displacement between the base and ceiling levels due to subsoil movement created the destructive horizontal force. At the point when the seismic impact results this type of movement in a metro stations station it tends to be critical. The non-linear behavior of the subsoil profile may also be significant. This paper fundamental describes about the seismic analysis of the underground metro station structures with full dynamic time-history analysis. In time history analysis method, the soil and its boundary conditions should be reasonably modeled and processed. When calculating the transverse seismic response of underground station structures, the dynamic interaction model of soil structure can be used to analyze the problem of plane strain. The results of the analysis from this method are presented and compared for different conditions and natures of soil. This paper describes the procedures to conduct numerical analysis using this method. It will be supportive to design a seismic resistive underground metro station structure in an earthquake prone zone.

*Keywords:* Underground structures; Metro station; Seismic design; Seismic analysis;

## II. Image:




## III. Reference:

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## IV. Biography:

Sudhir Bikram KC is a final year student of Masters in Civil-Structure Engineering in Wuhan University of Technology, Wuhan, People's Republic of China (PRC). He is presently having research on the topics “Seismic Response of Typical Metro Station and Reduction Methods” under the supervision of Dr. Guo-bo Wang, Besides, He has also several years of experiences in structural design and supervision of various infrastructures from several International organizations.

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