

Rétro-analyse tridimensionnelle d'une excavation profond multisupportée

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Abstract

The construction of a deep excavation in an urban environment behind flexible retaining structures requires that the generated movements are limited to prevent damage to adjacent structures and works. In this context, this article examines the numerical modelling with a finite difference code of a monitored deep excavation consisting of a diaphragm wall supported by several rows of struts. The Jeanne d'Arc station is located on the Toulouse subway line B and is built in an overconsolidated molassic geological context. The set of measurements obtained with different monitoring devices appears to be consistent and confirms the three-dimensional nature of the movements induced by the excavation. These measurements have been confronted with the numerical back-analysis (2D and 3D) using a finite difference code in which the dewatering is taken into account through an uncoupled flow-mechanical calculation (One-sided coupling).

Keywords : deep excavation, numerical modelling, retaining wall, strut, soil-structure interaction.

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