

## 軟弱地盤の沈下挙動の評価と予測手法の開発

長期沈下を含む沈下量の評価



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### Estimation of Long-Term Settlement and Secondary Compression of Clayey Soft Ground

Keyword : 一次元圧密・多次元圧密・二次圧密

Topics: One-dimensional consolidation, plane strain, secondary compression

山がちで平地の少ない我が国では、軟弱な沖積平野に都市が発達してきました。軟弱地盤の変形(沈下)挙動の予測は重要課題で、一次元のみならず多次元の沈下挙動および長期間継続する沈下挙動を、簡単な試験結果のみでより良く評価するための研究を進めます。

長期沈下の要因である二次圧密がいつから始まるのかについては、2つの考えがあり意見の分かれるところです。二次圧密は一次圧密中から発生しているというスタンスのもと、この量を定義する二次圧密モデルを提案します。さらに、多次元へ応用することで、道路盛土など平面ひずみ条件の沈下挙動の評価を行います。

室内試験の沈下挙動であれば、これをある程度の精度で再現できる二次圧密モデルを構築しています。多次元への拡張は容易ではありませんが、重要なテーマですのでチャレンジしていきます。

An urban area has developed on the soft alluvial ground in the low land. A prediction of deformation and subsidence behavior of soft foundation is the most important issue, and many estimation methods based on one-dimensional consolidation theory were proposed. In this study, the model which can evaluate subsidence behavior in consideration of secondary compression examines, and it is proposed.

There are two ideas about when secondary compression starts. However, it can't make sure of this phenomenon by an experiment. The secondary compression model which supposed that secondary compression occurred from primary consolidation is proposed. The proposed model is expanded to multidimensional consolidation problem, and consolidation behavior of plane strain condition is estimated.

We already suggest the secondary compression model that can reproduce the subsidence behavior of the laboratory test. The constants that are necessary for this model can decide a parameter only from one-dimensional consolidation test. The expansion to the hyperspace is not easy, but tries it because it is an important theme.

