

## **THE EFFECTS OF GEOTECHNICAL AND STRUCTURAL PARAMETERS ON THE COLLAPSE OF COLLAPSIBLE SOILS SUBJECTED TO A VERTICAL LOAD**

**Ouahiba Mansouri & Salah Messast**

Department of Civil Engineering, Laboratory LMGHU, University of Skikda, Algeria

### **ABSTRACT**

This study consists on the modulating of the behavior of a collapsible soil, under vertical load. The case considered in this work, is a real project of a foundation placed on a collapsible soil which is presented by Thanh Tra Phung. The study of a reference model was performed by a finite elements method calculation, implemented in the software Plaxis. The reference model adopted presents a good reproduction of reality (settlement soil under a foundation). This work establishes a parametric study in order to put in evidence the effect of several geotechnical parameters (cohesion, friction angle and oedometric modulus) and structural parameters (load applied and width of foundation) on the rate of collapse.

It appears from this study that, the variation of the above parameters in 'reasonable' forks has a considerable effect on the settlement (collapse) under the center of the foundation. This variation of several parameters can give a preliminary idea the method of improvement of this type of soils in the purpose to avoid the problems of collapse in geotechnic.

**KEYWORDS:** Foundation, Collapsible Soil, Geotechnical Parameters, PLAXIS Code, Collapse, Settlement