عنوان مقاله:

Reliability analysis of consolidation settlement by geostatistical method considering borehole location

محل انتشار:

هشتمین کنگره سالانه بین المللی عمران، معماری و توسعه شهری (سال: 1401)

تعداد صفحات اصل مقاله: 13

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خلاصه مقاله:

In geotechnical engineering , settlement is defined as the vertical movement of the ground. Excessive settlement can lead to distortion and damage to structures, services and infrastructure that are founded on the material subject to the movement. It is at least intuitively evident that variability in soil properties will have a significant effect on the settlement of structural foundations. The heterogeneity of the soil can be implemented by qualified reliability analysis. This study investigates the reliability analysis of settlement considering borehole location under the foundation by the geostatistical method. For this purpose, the relevant MATLAB program was coded and the distribution of the settlement under the foundation was obtained by solving three cases. The results indicate that changing the location of boreholes affects not only the standard deviation of the settlement distribution but can also cause variations in the mean value. With changes in data distribution (mean and standard deviation), the probability of failure (probability of exceeding a certain settlement) values also change. In addition, cases with a smaller distance between the boreholes .and the foundation showed a higher probability of failure

کلمات کلیدی:

Borehole location, Geostatistical method, Heterogeneity, Reliability analysis, Settlement