عنوان مقاله:

Modeling Uncertainties in Soil Properties by Random Finite Element Method

محل انتشار:

اولین کنفرانس ملی مهندسی ژئوتکنیک (سال: 1392)

تعداد صفحات اصل مقاله: 8

نویسندگان:

A Johari - *Assistant Professor, Department of Civil and Environmental Engineering, Shiraz University of Technology, Shiraz, Iran*

Z Abedini - *M.Sc. Candidate of Geotechnical Engineering, Department of Civil and Environmental Engineering, Shiraz University, Shiraz, Iran*

M Jahanandish - *Associated Professor, Department of Civil and Environmental Engineering, Shiraz University, Shiraz, Iran*

S Beshkoofeh - *M.Sc. Candidate of Geotechnical Engineering, Department of Civil and Environmental Engineering, M.Sc. Candidate of Geotechnical Engineering, Department of Civil and Environmental Engineering,Shiraz University of Technology, Shiraz, IranShiraz University o*

خلاصه مقاله:

The Finite Element Method offers great potential for implementing uncertainties in properties of materials such as soil. In many cases, soil parameters should be considered as random variables or random fields. This paper discusses the Random Finite Element Method in predicting the variation of the elastic settlement due to the uncertainties of the elastic modulus. The geometry and the Poisson's ratio are considered as invariable parameters. The correlation length for the 30×60 m field is considered 30 m in order to have a conservative estimation of the elastic modulus variation. The number of 400000 realizations of the random field are generated. By generating and analyzing multiple realizations, the statistics and the density function of the maximum settlement is estimated. The reliability of the foundation according to limit state failure, in the form of excessive settlements is estimated.

کلمات کلیدی:

Finite Element Method, Random Finite Element Method, Random Field, Monte Carlo Simulation, Elastic Settlement

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/228448