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# UTICAJ BOČNE KRUTOSTI ŠIPOVA NA ANALIZU OKVIRNIH SISTEMA PREMA TEORIJI DRUGOG REDA

***Sažetak:***

*U radu je prikazan proračun sistema oslonjenog na šipove prema teoriji drugog reda. Uticaj šipova kao oslonaca na konstrukciju se zamjenjuje elastičnim osloncima. U numeričkom modelu oslonci se modeliraju kao elastične opruge. Za usporedbu rezultata proračuna analiziran je sistem oslonjen na krute i deformabilne oslonce. Analiza sistema je provedena prema teoriji prvog i teoriji drugog reda, koja uvodi u proračun geometrijsku nelinearnost. Prikazan je postupak modeliranja tla oko šipa sa zamjenjujućim oprugama. U numeričkom primjeru prikazana je aplikativnost opisanog postupka. Usporedba rezultata proračuna je urađena na numeričkim modelima sistema sa krutim i elastičnim osloncima.*

***Ključne riječi:***

*Bočna krutost šipa, elastični oslonci, teorija drugog reda*

# INFLUENCE OF THE LATERAL STIFFNESS OF PILES FOR ANALYSIS OF FRAMEWORK SYSTEMS ACCORDING TO SECOND ORDER THEORY

***Summary:***

*The paper presents a calculation of a system supported on piles according to the second order theory. The influence of piles as supports on the structure is replaced by elastic supports. In the numerical model, the supports are modeled as elastic springs. To compare the calculation results, a system based on rigid and deformable supports was analyzed. The analysis of the system was performed according to the first order theory and the second order theory, which introduces geometric nonlinearity into the calculation. The process of soil modeling around a pile with replacement springs is presented. The applicability of the described procedure is shown in a numerical example. The comparison of the calculation results was done on numerical models of systems with rigid and elastic supports.*

***Key words:***

*Lateral stiffness of pile, elastic supports, the second order theory*

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