

OPTIMIZATION OF RC FRAME STRUCTURES SUBJECTED TO STATIC LOADING

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Generally, the initial design of reinforced concrete cross-sections are assumed by a designer and amount of reinforcements are calculated. Economy, which is the main goal of engineers, is only provided if engineer is expert. Optimization techniques can be employed to find best design variable. In this study, reinforced concrete (RC) frame structures are optimally designed by using harmony search. The design constraints given in ACI-318: Building Code Requirements for Structural Concrete are taken into consideration. Optimum cross-sections and detailed reinforcements of a single-bay single-story frame structures are found for minimum material cost of the structure. The results showed that the proposed method is effective to find optimum design variable with minimum costs.