

# OPTIMAL CALCULATION OF PARTIAL TRANSMISSION RATIOS OF FOUR-STEP HELICAL GEARBOXES WITH SECOND AND FOURTH-STEP DOUBLE GEARS-SETS FOR MINIMAL MASS GEAR

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## TÓM TẮT:

This paper presents a new study on the applications of the optimization and computer techniques for optimal determination of partial ratios of four-step helical gearboxes with second and fourth-step double gear-sets for minimal mass of gears. In the study, from the condition of moment equilibrium of a mechanic system which includes gear units and their regular resistance condition, models for determining the partial ratios of the gearboxes were proposed. In particular, explicit models for prediction of the partial ratios are introduced by using regression analysis technique. By using these models, the calculation of the partial ratios becomes accurate and simple.