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## EXPERIMENTAL DETERMINATION OF TENSION AT THE STEM OF GEAR TOOTH

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*Following the continuous trend of development of methods and procedures, used as basis for obtaining the realistic data concerning the load capacity of the gearing, an appropriate mathematical and experimental model has been developed to enable efficient analysis of the tensions at desired gear tooth sections.*

*Tests were performed by use of the measuring strips method on the model in the form of gear segment of the gear assembly in real high power gearing design. The full-size model was made and realistic operating conditions were simulated during testing. By this approach, the results obtained upon static and dynamic operating conditions testing fully reflected the tension condition at the critical section of the gear tooth.*

*In order to verify the results obtained, they were compared with the results obtained numerically.*

*The comments of the results obtained present the opportunities and guidelines for improvements of the model itself and procedures for research of the tension condition at the stem of gear tooth.*

*Key words: tension, gear, model.*

*U skladu sa stalnom tendencijom razvoja metoda i postupaka na osnovu kojih se može steći realna slika o nosivosti zupčastih prenosnika, razvijen je odgovarajući matematički i eksperimentalni model koji omogućava efikasnu analizu napona u željenim presjecima zupca.*

*Ispitivanja su izvršena, primenom metode mernih traka, na modelu u obliku zupčastog segmenta zupčanika jedne realne konstrukcije prenosnika velikih snaga. Model je urađen u pravoj veličini i pri ispitivanju su simulirani realni uslovi rada. Tako, dobijeni su rezultati pri statičkim i dinamičkim uslovima rada koji verno odslikavaju stanje napona u kritičnom preseku zupca zupčanika.*

*U cilju verifikacije dobijenih rezultata, izvršeno je poređenje istih sa rezultatima dobijenim numeričkim putem.*

*Kroz komentar dobijenih rezultata date su mogućnosti i smernice za usavršavanje modela i postupaka istraživanja naponskog stanja u ponožju zupca zupčanika.*

*Ključne reči: napon, zupčanik, model.*