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# ANALYSIS OF TEETH GEOMETRY, LOAD DISTRIBUTION AND PITCH POINT EFFECTS ONTO GEAR TEETH SURFACE FATIGUE FAILURE

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Abstract: In this paper the influence of teeth geometry and load distribution for simultaneously conjugated pair of teeth on the contact stress for the tooth flank, has been investigated. The influence of the load distribution is analysed by the load distribution factor $K_{\square}$ and teeth geometry is analysed by radius of the curve teeth flanks factor $Z_{\rho}^{2}$. The influence of the position of the pitch point during the contact period on the teeth surface fatigue failure has been analysed on the base of the experiment investigation. Experimental investigations were carried out on a closed power flow machine and using gears of steel.

***Key words:*** **cylindrical gear, teeth geometry, load distribution, pitting, contact stress, closed power flow**

# ANALIZA UTICAJA GEOMETRIJE ZUBACA, RASPODELE OPTEREĆENJA I KINEMATSKOG POLA NA DINAMIČKO RAZARANJE BOKOVA ZUBACA ZUPČANIKA

U radu je istraživan uticaj raspodele opterećenja kod istovremeno spregnutih parova zubaca i geometrije zubaca na površinsku čvrstoću bokova zubaca cilindričnih evolventnih zupčanika. Uticaj raspodele opterećenja analiziran je posredstvom bezdimenzionog faktora $K_{.}$a uticaj geometrije zubaca obuhvaćen je bezdimenzionim faktorom radijusa krivina bokova zubaca $Z_{\rho}^{2}$. Na osnovu eksperimentalnih istraživanja razmatran je uticaj položaja kinematskog pola u toku dodirnog perioda na dinamičko razaranje bokova zubaca. Eksperimentalna istraživanja sprovedena su na čeličnim zupčanicima na uređaju sa zatvorenim kolom snage.

***Ključne reči:*** **zupčanik, geometrija zubaca, raspodela opterećenja, pitting, kontaktni napon, zatvoreno kolo snage**