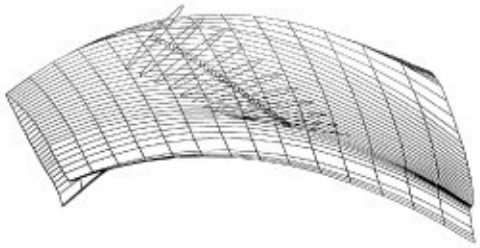
BÄR, G.; IOTCHEV V.:

Accurate Tooth Contact Determination for Hypoid Bevel Gears using Automatic Differentiation.

4th World Congress on Gearing and Power Transmission, Paris, March 16-18, 1999, Vol.1, pp. 519-529.

For the first time, due to automatic differentiation, tooth contact of meshing hypoid gears is achieved that does not involve any approximation. The path of contact, the contact pattern, reduced contact ellipses, and the transmission error are computable with machine accuracy of the computer. The new model of gear tooth flank generation can predict the occurrence of undercut and compute the undercutted flank geometry for any machine settings. Approaches are given to optimize the contact pattern geometrically.



Reduced DUPIN-indicatrices along the path of contact on the pinion tooth surface