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### 行星减速器油膜均载的分析计算

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#### ANALYSIS ON EQUILIBRATING LOAD IN A PLANETARY REDUCER BY OIL FILM CALCULATION

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摘要

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**摘要** 运用流体动力润滑理论分析了油膜均衡行星齿轮间载荷的机理,解释了共转滑动轴承的动态特性。利用数值方法求解了 Reynolds 方程。计算结果和试验结果有良好的-致性,并表明:共转滑动轴承的油膜柔度随载荷的增大而减小;随轴承间隙的增大而增大;随转速的增大而减小。

**关键词:** 挠性 齿轮 轴颈轴承

**Abstract:** In this paper, the principle of equilibrating loads in planetary gears is analysed by oil film calculation, and the dynamics characteristics of co-rotating bearing (its bush rotates with journal rotating) are explained by hydrodynamics theory. The analysis results show that the co-rotating bearing has a higher load capability and a larger flexibility of oil film. The Reynolds Equation is solved by numerical method, and results are shown by curves. The experimental investigation on co-rotating bearing is made, and experimental results show that the oil film flexibility decreases as the bedding load increases, the flexibility increases as the bearing clearance increases and decreases as bearing rotation rate increases. The experimental investigation on load equilibrating is made in a planetary reducer, and results show that loads among planet gears get a good distribution by using co-rotating bearing.

**Keywords:** flexibility gear journal bearings

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