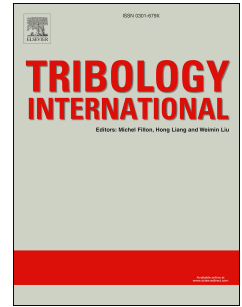


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# Study on Influencing Factors of Lubrication Performance of Water-lubricated Micro-Groove Bearing

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**Abstract.** The influence coefficient method (ICM) was proposed to evaluate the elastic deformation, and the elastic-hydrodynamic lubrication (EHL) model of the water-lubricated micro-groove bearings was developed. The model was experimentally validated, and the effects of the eccentricity ratio and bearings' materials on the lubrication performance of the micro-groove bearings were studied. The results show that the effects of the micro-grooves on the hydrodynamic lubrication of water-lubricated bearings are beneficial for the smaller eccentricity ratio and little for the smaller Young's modulus and Poisson's ratio.

**Keywords:** Water-lubricated bearing; ICM; micro-groove; EHL

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