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Influence of textured surface arrangement on hydrodynamic journal bearing performance

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Abstract : A progressive interest is granted to the textured surfaces in a journal bearing. The use of surfaces with certain shapes and dispositions of textures can be an effective approach to improve the performance of hydrodynamic bearings. This paper presents the numerical approach used to analyze the effect of cylindrical texture form on the characteristics of a hydrodynamic contact. The results obtained show that the most important characteristics of the contact like minimal film thickness, maximal pressure, axial fluid flow and friction torque can be improved through an appropriate choice of textures distribution on the contact surface.

Keywords : textures, Hydrodynamic lubrication, journal bearing