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Effect of textured area on the performances of a hydrodynamic journal bearing

Nacer Tala-Ighil, Michel FILLON, Patrick Maspeyrot

Abstract: A growing interest is given to the textured hydrodynamic lubricated contacts. The use of textured surfaceswith different shapes of microcavities (textures) and at different locations of the texture zone can be aneffective approach to improve the performance of bearings. The present study examines the texturelocation influence on the hydrodynamic journal bearing performance. A numerical modelling is used toanalyze the cylindrical texture shape effect on the characteristics of a hydrodynamic journal bearing. Thetheoretical results show that the most important characteristics can be improved through an appropriatearrangement of the textured area on the contact surface.

Keywords : textures, Hydrodynamic lubrication, journal bearing, Finite difference method