

Author's Accepted Manuscript

A numerical investigation of both thermal and texturing surface effects on the journal bearings static characteristics

Nacer Tala-Ighil, Michel Fillon



www.elsevier.com/locate/triboint

PII: S0301-679X(15)00184-X
DOI: <http://dx.doi.org/10.1016/j.triboint.2015.02.032>
Reference: JTRI3660

To appear in: *Tribology International*

Received date: 16 July 2014
Revised date: 4 February 2015
Accepted date: 13 February 2015

Cite this article as: Nacer Tala-Ighil, Michel Fillon, A numerical investigation of both thermal and texturing surface effects on the journal bearings static characteristics, *Tribology International*, <http://dx.doi.org/10.1016/j.triboint.2015.02.032>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

A numerical investigation of both thermal and texturing surface effects on the journal bearings static characteristics

Nacer TALA-IGHIL ^{a,*}, Michel FILLON ^b

^a Welding and NDT Research Center (CSC), BP 64 CHERAGA - ALGERIA

^b Institute Pprime, CNRS - University of Poitiers - ENSMA, FRANCE

n.tala-ighil@csc.dz

Abstract:

Journal bearing characteristics modellization has been investigated in this paper for both cases of texture presence or absence onto the bearing surface. The thermal effect has been studied. The used numerical approach in this analysis is Finite Difference Method. The textured bearing performance enhancement passes essentially by a minimum film thickness and a friction torque improvement through an appropriate surface texture geometry and right texture distribution on the bearing surface. It is found that the simulations results are in good concordance with those issued from the literature. The obtained results by considering the temperature effect are more realistic.

Keywords: Journal bearings, Reynolds equation, hydrodynamic lubrication, Stribeck curve, texture.

Download English Version:

<https://daneshyari.com/en/article/7003027>

Download Persian Version:

<https://daneshyari.com/article/7003027>

[Daneshyari.com](https://daneshyari.com)