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# A Thermodynamic Solution for the Static and Dynamic Characteristics of a Two-Lobe Journal Bearing

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**Abstract :** The work described in this paper is an investigation of the static and dynamic characteristics of two-lobe journal bearings taking into consideration the thermal effects. A thermo-hydrodynamic solution of a finite two-lobe journal bearing is performed by solving the generalized form Reynolds equation with the energy equation, taking into consideration viscosity variation across the film thickness. The static and dynamic characteristics were numerically obtained. The results are evaluated for different values of viscosity-temperature coefficient and Peclet number. The results show that considering the thermal effects in the solution of the two-lobe journal bearing has a marked on the study of its stability.

**Keywords :** two-lobe bearing, thermal effect, static, dynamic characteristics
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