Combined influence of geometric imperfections and misalignment of journal on the performance of four pocket hybrid journal bearing

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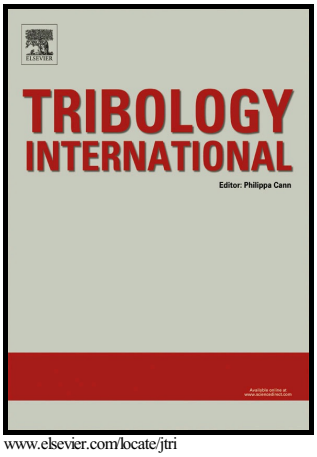

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Abstract: The present study investigates the effect of misalignment of journal in conjunction with the effect of geometric imperfections of journal on the performance of four pocket hybrid journal bearing system. Three types of geometric imperfections of journal viz. barrel shape, bellmouth type and undulated type are considered. The misalignment of the journal is incorporated in the analysis by using two parameters $\bar{\varphi}$ and $\bar{\Psi}$. The governing Reynolds equation is solved by using Galerkin's technique. The numerically simulated results indicate that the performance of a journal bearing system gets significantly deteriorated due to the geometric imperfections and misalignment of journal.

Keywords: Imperfections, hybrid journal, Misalignment, FEM.