Stochastic dynamic behaviour of hydrodynamic journal bearings including the effect of surface roughness

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Highlights

- A practically relevant in-depth analysis on the stochastic dynamic behaviour of hydrodynamic journal bearings is presented.
- The individual as well as compound effect of stochasticity arising due to the random variation of eccentricity ratio and roughness parameter are accounted in the analysis.
- An efficient radial basis function based Monte Carlo simulation framework is developed for the probabilistic analyses of different crucial performance parameters of the hydrodynamic journal bearing.
- Relative sensitivity to stochasticity for different performance parameters is analyzed.