

A simplified model for the wear prediction of plain bearings in the variable stator vane system

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The wear of plain bearings in the variable stator vane (VSV) systems in a turbojet engine is a significant problem for compressor efficiency and stability requiring adapted models. The VSV bearings are located in a complex system and are exposed to combined and oscillating loads. This study aims to predict the wear evolution of the VSV bearings, considering the complexity of the system's geometry and the loads with adapted computational time. This paper presents a three-dimensional formulation of this highly nonlinear wear problem under simplifying hypotheses in the objective to obtain a compromise between the quality of the prediction and the CPU time.