

This issue is of paramount importance in the analysis and design of realistic multibody mechanical systems undergoing spatial motion. These forces are then incorporated into a standard formulation of the system's governing equations of motion as generalized external forces. When the spherical clearance joint is modeled as dry contact; i.e., when there is no lubricant between the mechanical elements which constitute the joint, a body-to-body (typically metal-to-metal) contact takes place. In this situation, the squeeze film action, due to the relative approaching motion between the mechanical joint elements, is considered utilizing the lubrication theory associated with the spherical bearings.