## ROTATIONAL INERTIA EFFECT IN A CURVILINEAR THRUST BEARING WITH POROUS LAYER LUBRICATED BY A NEWTONIAN FLUID

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The flow of a Newtonian lubricant in a bearing clearance is discussed. The bearing is modelled by two rotational surfaces and the porous layer is adhered to the curved impermeable surface. The effects of rotational inertia forces on the pressure distribution are examined. The flow in the bearing clearance is considered with inertia and the Navier-Stokes and Poisson equations are uncoupled by using the Morgan-Cameron approximation. As an example the bearing modelled by two spherical surfaces was discussed in detail.

Key words: inertia effect, squeeze film, Newtonian fluid, curvilinear bearing, porous layer.

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