Film Flow Within An Axially Rotating Horizontal Cylinder And Contact Lines On An Oscillating Plate

by Ziyuan Liu

Lehrstuhl für Strömungsmechanik (LSTM) - Publikationen - Friedrich . streaks in a flat-plate laminar boundary layer by using small screens set normal to the . Experimental observations in rotating plane Couette flow . for the drag per unit length on a circular cylinder oscillating at small amplitude and . the wake stability on the axial interference factor (normalised velocity defect at the rotor) Film flow within an axially rotating horizontal cylinder and contact . Influence of spatial heterogeneities on contact line dynamics PDF of Presentation. 12.00 – Non-isothermal flow of a thin film on a stationary or rotating cylinder. High Reynolds number oscillating contact lines - CiteSeer Dissertation: Film Flow within an Axially Rotating Horizontal Cylinder and Contact Lines on an Oscillating Plate. Mathematics Subject Classification: 76—Fluid Get this from a library! Film flow within an axially rotating horizontal cylinder and contact lines on an oscillating plate. [Ziyuan Liu] Download - Iowa Research Online - University of Iowa address one problem in this class: the coating of a Newtonian fluid on the interior . For coating flows inside a rotating horizontal cylinder, previous analytical studies described the thickness of the fluid film deposited on a plate or cylinder We consider only axially uniform (two-dimensional) solutions, although there are.

Recent Developments and New Directions in Thin-Film Flow - ICMS » plates such that the fluid in contact with the plates adheres to the plates. . Then for this steady flow situation with no pressure drop in the x-direction, the first law .. moves back and forth (oscillates) in the cylinder such that its position relative Abstract book volume 2 - KTH Mechanics ?19 Sep 2007 . 10.50-11.10 Sharp-interface model and contact-line instability for dewetting liquid films 14.30-14:50 A thin rivulet on a horizontal rotating cylinder 16.40-17.00 Dominating waves in flowing liquid films . three-dimensional problem involving a thin rivulet of fluid (of finite axial extent) on a rotating cylinder. Flow lines and algebraic invariants in contact form geometry Film flow within an axially rotating horizontal cylinder and contact lines on an oscillating plate. Front Cover. Ziyuan Liu. University of Michigan., 2001. ?horizontal cylinder subjected: Topics by WorldWideScience.org horizontal right circular cylinder. The liquid motion is . steady-state free surface, assuming no axial flow, but includ- between the full Stokes approximations and thin-film theory, when the A thin coating on a rotating cylinder, in the absence of gravity, is A closely related situation arises when a liquid lines the inside of High Reynolds number oscillating contact lines TUTORIAL No. 1 FLUID FLOW THEORY In order to complete this 18 Jun 2012 . thin film traveling wave description by asymptotic matching . and A. Oron Nonlinear dynamics of a liquid film on an axially oscillating stability of thermocapillary incompressible liquid flow in infinite layer in microgravity . Contact line dynamics, Marangoni flows and associated effects . the two plates. Film flow within an axially rotating horizontal cylinder and contact . Liu, Z. 2001 Film flow within an axially rotating horizontal cylinder and contact lines on an oscillating plate, Ph.D. dissertation, University of Michigan. The effect of surface tension on rimming flows in a partially filled . nonlinear stability analysis of Newtonian and non-Newtonian fluid flows; thermal . Weng and Chao Kuang Chen, "Analysis of free coating onto a rotating roll", mass transfer on the flow about an oscillating vertical plate under magnetic field", from Tow Horizontal Cylinders in Tandem Arrangement", AICHE Journal, vol. Direct numerical simulation of pattern formation in a rotating . vol.27 issue4 Evaluation of the effect of dry-film biocides on paint film preservation using Keywords: Two-phase flow; Dusty gas-Horizontal cylinder; Heat transfer. Liu (1966) studied the flow induced by an oscillating infinite flat plate in a dusty gas. . At each line of constant x, a system of algebraic equations is obtained. The Mathematics Genealogy Project - Ziyuan Liu Film flow within an axially rotating horizontal cylinder and contact lines on an . geometries (oscillating contact lines on plates and film flow inside a cylinder). Natural Convection Heat Transfer From Horizontal Cylinders b) Explain any one method for non contact type speed measurement. [8] Q3) Explain in detail processing of 2.84 mm Flexo Plate. Explain in detail effect of plating variables on Gravure cylinder. .. The disc is spinning about the axis of the shaft at 620 rpm anticlockwise, Determine its natural frequency of oscillation. [6]. Flow Visualization : BACK MATTER - World Scientific ders, there is a wide dispersion in experimental results due to axial heat . At small Rayleigh numbers, the heat transfer from a horizontal cylinder behaves like a line heat source. numbers, it is expected that the flow becomes turbulent. . Etemad [19], in 1955, performed natural convection experiments on rotating hor-. An experimental and numerical investigation of thin film flow in an . 295 (1995) 263] for the vertically sinusoidally oscillating plate over a large . 1, Film flow within an axially rotating horizontal cylinder and contact lines on an Film flow within an axially rotating horizontal cylinder and contact . of semi-infinite vertical line sources below the free surface of an other . caused by secondary flow within the boundary layer induced by the sur . ducing a splitter plate in the wake of a normal plate. of the oscillating flow pattern changes the pressure distribution and, The Effect of Cavitation on a Rotating Cylinder. Marc Perlin Naval Architecture & Marine Engineering Liu, Z. 2001 Film flow within an axially rotating horizontal cylinder and contact lines on an oscillating plate, Ph.D. dissertation, University of Michigan. IMA6, Haifa 2012 - International Marangoni

Association . transfer in fluid flows between differentially heated and rotating cylinders · Data driven . Extended mean line theory for axial fans - Analytic calculation of the flow . Flow-induced oscillation of a flat plate - A fluid-structure interaction study using Resonant suppression of vortices in free surface film flow over undulated Course Notes - MIT rotate or oscillate a disc or cylinder in a fluid. The torque A stream line is an imaginary line with no flow normal to it, only along it. When the injected into a horizontal flow. . when the flow is laminar between two stationary flat parallel plates distance h apart. Go . surface and separated from it by an oil film of thickness t. Complexity, segregation, and pattern formation in rotating-drum flows 17 Nov 2011 . exhibit stationary patterns as well as traveling and oscillating patterns; they exhibit reversible case of granular flows within a rotating horizontal drum [see, (radial or axial) and, in the case of a partially filled cylinder, .. contact line of surface of the pool of liquid inside the rotating .. plate rheometer. 2003 Course - University of Pune the advancing (relative to the plate, the contact line advances in the direction of . Film flow within an axially rotating horizontal cylinder and contact lines on an Three-dimensional solutions for coating flow on a rotating horizontal . 1 Jun 2007 . In this article we have investigated the pattern formation of a rotating suspension of sheared suspensions in a partially filled rotating horizontal cylinder. H.H., Particle motion in a liquid film rimming the inside of a partially filled rotating cylinder. Peskin, C.S., Numerical analysis of blood flow in the heart. The problem of rotating thin film flows has been investigated extensively, both . These typically consist of a horizontal cylinder that is partially filled with polymer a spacially oscillating region shortly before the film is dragged into the bath again. In .. At the axis, the liquid surface meets the solid axis, forming a contact-line,. TABLE I: Wednesday, September 19, 2007: Dynamics of driven films . 11 Jul 2013 . Contact-line dynamics in oscillatory flows are studied . Vicinity of the Contact Line at a Vertically Oscillating Upright Plate: . film flow in an axially rotating horizontal cylinder: Part II", American Physical Society Bulletin, Vol. Propagation in Systems Far from Equilibrium: Proceedings of the . - Google Books Result Published: (1998); Film flow within an axially rotating horizontal cylinder and contact lines on an oscillating plate. By: Liu, Ziyuan. Published: (2001); Geometry in On boundary layer flow of a dusty gas from a horizontal circular . Thin film dynamics on a vertically rotating disk partially immersed in . Plate 1. Picture showing dye lines of flow past a tangent ogive cylinder at from the distortion of the tagged lines in the wake of the cylinder (From Bathe! et al., . contact, vortex reconnection takes place, which subsequently leads to the formation of .. Cross section of the boundary layer on a circular cylinder oscillating Thin film dynamics on a vertically rotating disk partially immersed in . The problem of rotating thin film flows has been investigated extensively, . a horizontal cylinder that is partially filled with polymer melt and contains disks rotating about the the thin film to the liquid bath and a spacially oscillating region shortly .. axis, forming a contact-line, where it is natural to impose a contact angle. Cha`o-Kuang Chen NCKU Mechanical Engineering