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Hydrodinamic Lubrication

one tries to calculate the value of the fluid friction torque. Obviously, such a device would work properly if the maximum torque of the coupling is higher than the resistance torque given by the tire. The fluid friction torque on the temperature field in the coupling, since the temperature influences the oil viscosity. However, the temperature field in not constant and has to be known at any instant, which requires a transient calculus model. In the present work we also consider a variable regime of rotational velocity, that will be taken into account by a trapezoidal law. We determined the influence of this regime upon the temperature distribution on both radial and axial directions in coupling and the its effects on the fluid friction torque.

3. THERMAL ASPECTS OF A SINGLE FLOW COMBINED HYDRODYNAMIC BEARING

by Mihail IONESCU [1] & Vladimir IONESCU [2]

[1] "Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

[2] "Spiru Haret" University of Bucharest - Romania

***Abstract**: Une procédure numérique a été développée pour analyser le comportement thermoélastohydrodynamique transitoire de paliers de tête de bielle soumis à des charges dynamiques. Les équations de Reynolds, de l'énergie dans le film et de la chaleur dans les solides sont résolues en utilisant la formulation éléments finis. Les maillages éléments finis des trois domaines sont interconnectés et les conditions de continuité du flux de chaleur entre les différents domaines deviennent ainsi implicites. Seules les conditions aux limites sur les contours des solides (extérieur de la bielle et intérieur du maneton) doivent être imposées.*

4. CHARACTERISTICS OF COMPLIANT BEARINGS OBTAINED BY NUMERICAL MODELLING

by Nicuşor BUTNARU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: Due to the nature of the layer, the bearing may present large deformations and a non-linear stress-strain law applies. The investigation of compliant journal bearings is directed toward the fundamental behavior characteristics which are necessary when compliance is factored into the final design. The bond between the thermoelastohydrodynamic study of the contact and the calculation of the bush deformations has allowed obtainance of functional characteristics of a flexible bearing. Analitycal determination of performance characteristics are shown as a function of the bearing flexibility. As the deformation coefficient increases, load capacity decreases and minimum film thickness will occur near the two sides of the bearing.*

Basic and Applied Elastohidrodynamics

12. A TRIBOMECHANICAL SYSTEM: THE EHD CONTACT

pp. 107 - 114

by Louis FLAMAND

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Abstract: *L'analyse fonctionnelle d'un contact est complexe, car les phénomènes mis en jeu ont parfois mal connus, s'étalent souvent sur les échelles larges et sont toujours couplés. Dans de cas d'un fonctionnement de type élastohydrodynamique, cette analyse s'appuie sur des modèles robustes et bien validés. Cependant, la réalité des contacts déborde largement les hypothèses des contacts modèles et leur analyse doit être abordée de manière systémique et avec prudence. Cette présentation se propose de préciser cette démarche vis à vis de certaines des perturbations dues à la réalité des contacts.*

13. BEHAVIOUR OF EHD LUBRICANT FILMS UNDER RAPID VARIATION OF ENTRAINMENT SPEED

pp. 115 - 126

by Romeo P. GLOVNEA & Hugh SPIKES

Imperial College of Science, Technology and Medicine London

Abstract: *As on present time, elastohydrodynamic (EHD) lubrication is reasonably well understood, for steady-state conditions, research is beginning to focus on the behaviour of EHD systems under transient conditions. Many practical systems experience such conditions, including cams, gears, constant velocity joints and all components undergoing reciprocating motion, at start of the motion or coming to a halt. In the analysis of such systems, it is usually assumed that film thickness can be predicted from the instantaneous velocity using steady-state EHD theory. However such an assumption implies that there will be zero lubricant film thickness as soon as the entrainment velocity falls to zero, which is in contradiction with the behaviour often observed in practice. The aim of the work described in this paper was to investigate the evolution of lubricant film thickness in an EHD contact undergoing rapid, cyclic variation of entrainment velocity. The method for measuring the EHD film thickness used in the present study was ultra-thin interferometry using a high-speed video camera. The studied contact was formed between a glass flat disc and a steel ball. In order to obtain very rapid variation of entrainment speed the disc was kept fixed and only the ball was driven in a desired fashion. In the present paper a linear accelerated/decelerated variation of entrainment speed was studied. Because of low inertia of the ball*

motions with frequencies up to 100 Hz could be achieved. The arrangement enabled a contact image and thus a film thickness measurement to be taken every one millisecond. The velocity of the ball was synchronously recorded at the same rate. The results show a time lag of the film thickness behind the entrainment speed on sudden accelerating or decelerating events as expected according to other results of the authors.

14. INTERFEROMETRIC RESEARCH OF AN EHL LINE CONTACT

by Lucian SEICIU [1] & Peder KLIT [2]

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[2] Technical University of Denmark

***Abstract**: The paper will present a testing rig for elastohydrodynamic lubricated (EHL) line contact film thickness measurements using the optical interferometry method. The rig is designed to reproduce as close as possibly real functioning conditions. The experimental results obtained on this rig will be presented in comparison with the ones made on a two disk (S.A.E.) rig. Also, it is presented a new approach in the understanding of the EHL line contacts.*

15. ASSESSMENT OF SHEAR REGIME OF LUBRICANT FILM IN A SLIDING-ROLLING LINE CONTACT

by Mircea BALAN & Emanuel DIACONESCU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: In order to appreciate the shear regime in a line contact EHD oil film, a procedure previously advanced by Grosu and Diaconescu was applied and extended for wider working conditions and for two pressure dependences of viscosity, namely Barus and Roelands. It was found that, as the shear intensity increases, Barus equation leads to initiation of plastic shear regime in the centre of the contact; then, the plastic zone extends towards the contact edges. A different behaviour is predicted by Roelands relationship: the plastic shear occurs at very high shear rates only, in the points of contact edges and evolves towards the centre line.*

sliding contact, contact temperature is an important topic, which must be addressed. In a recent paper, Pascovici & Cicone [15] proposed a simplified elasto-thermo-triblogical model for interference brush seals, which offers a closed form analytical solution for maximum contact temperature. The elastic model is based on classical linear beam flexure theory and includes several simplifying assumptions in order to obtain an analytical formulation for contact force corresponding to a given pre-load. However, the high elasticity of the bristles and possible large values of pre-load make questionable the assumption of linear deformation. The aim of the present paper is to evaluate the accuracy of the linear model by comparison with an improved, nonlinear elastic model. The results clearly show that the linear model is very accurate for a wide range of practical values of bristle dimensions and pre-load. The results can be easily extrapolated to include other effects like shaft run-out or mechanical and thermal elastic deformations. The model and the corresponding algorithm can be straightforward embedded in a numerical design procedure for brush seals.

22. ANALYSIS OF HEAT GENERATION AND TRANSFER IN BRUSH SEALS

pp. 201 - 212

by Mircea D. PASCOVICI & Traian CICONE

Polytechnic University of Bucharest – Romania

Abstract: It is unanimously accepted that wear in brush seals is a major concern that needs to be addressed in experimental and theoretical approaches. Although the contact temperature is an important parameter of the wear process, few attempts were made to measure or to model it. In a recent paper, Pascovici & Cicone [17] proposed a simplified elasto-thermo-triblogical model for brush seals based on classical fin model for heat transfer in the bristle. Their analytical solution allows to estimate the contact temperature for interference brush seals assuming that all the heat generated by dry friction (unlubricated contact) at the bristle tip is rejected by convective heat transfer between the bristle and the sealed gas. In the present paper this model is extended to include heat partition between the bristle pack and the shaft. An analysis of bristle-to-shaft contact forces is also made. Closed form analytical solutions for heat partition coefficient and maximum contact temperature are proposed. A numerical example is given, showing the importance of heat transfer calculation. The proposed model can be straightforward embedded in a design procedure for brush seals.

Rheology

23. A NEW POSTULATION OF VISCOSITY AND ITS APPLICATION IN COMPUTATION OF FILM THICKNESS IN THIN FILM EHL

pp. 213 - 220

by Chaohui ZHANG, Jianbin LUO & Shizhu WEN

State Key Laboratory of Tribology, Department of Precision Instruments, Tsinghua University, Beijing, P. R. China

***Abstract**: In this study, a viscosity modification model is developed which can be applied to thin film lubrication problems. The author believes that the viscosity distribution along the direction normal to the interface between liquid and solid surfaces can be approached by a function proposed in this paper. Based on the formula, lubricating problem of thin film elastohydrodynamic lubrication (thin film EHL) in isothermal and incompressible condition is solved and the outcome is compared to the experimental data. In thin film EHL, according to the computation outcomes, the lubrication film thickness is much greater than it is in Elastohydrodynamic Lubrication (EHL). While the velocity is adequately low (which equals to thin film thickness), the pressure distribution in contact area is very close to Hertzian distribution in which the second ridge of pressure is not obvious enough. The film shape demonstrates the earlobe-like form in thin film EHL, which is similar to EHL while the film is comparatively thicker. The transformation relationships between film thickness and loads, velocities or atmosphere viscosity in thin film EHL differ from those in EHL so that the transition from thin film EHL to EHL can be clearly seen.*

24. EXPERIMENTAL RESEARCH UPON LUBRICANT NATURE

pp. 221 - 226

by Simion PATRAŞ-CICEU, Alexandru POTORAC & Mihail IONESCU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: This paper presents the procedure of determining by experiment the fundamental physical parameters of a simple molecular liquid ε and σ on which base one can find out all the other rheologic characteristics of the fluid. The numerical predictions of the newly advanced computer code are matched against closed-form solutions for two contact scenarios.*

processes take place, that encourage the phenomenon. An important role in the functioning of abrasion couplings, with selective transfer, has the rheological lubricant. That is way, this work presents the rheological behaviour of the glycerin, in the abrasion couplings that function with selective transfer, this glycerin being the lubricant, that contributes to the selective transfer.

28. DEGRADATION OF LUBRICATING CAPACITY OF SOME GREASES USED IN AGGRESSIVE ENVIRONMENT

by Nicolae DIACONU, Constantin GHERGHIES & Ion CRUDU

"Dunărea de Jos" University of Galaţi - Romania

***Abstract**: In order to study the lubricant capacity of greases used in severe regimes, It was designed a stand with thermo-insulated room and auxiliary devices. This stand allows testing the grease behaviour in aggressive media and under heavy load. Infrared spectrometry is a good method for studying the modifications occurring in the molecular chains of tested greases.*

29. INITIAL STRESSES IN BIOLOGICAL SOLIDS

by Gheorghe FRUNZĂ

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: In its natural state, outside exterior forces, every body displays initial stress, which influences its behavior while fulfilling its function. Usual solid bodies, such as machine parts, electronic parts, composite materials, polymers, intelligent materials, biological solids, the initial stress may appear as a consequence of the manufacturing technology, due to contraction at solidification, due to crystal level effects introducing structure incompatibility, due to mounting errors, to temperature, or deliberately created. Biological solids feature a major characteristic, which any other engineering material lacks – it is the capacity of growing or shrinking. The live tissue can change dimension and, sometimes, mechanical properties. These changes are conditioned by exterior action, as well as by certain biochemical or biophysical processes which can change the stress filed in live tissue, in time – a property which is essential to life. Due to this stress, one cannot ascertain the absence of residual stress in the organism – that persists after the exterior forces have ceased action. A method ought to be found, which should enable the possibility to determine this stress, in order to determine the stress distribution in live organisms. Initial stress is important insofar as it is not null or uniform. Oftentimes, it is its effect which determines the way the biological solids – biomaterials displaying such stress – function. Thus, it is possible to observe certain phenomena, such as biomechanical fatigue, flow, and even break under critical loads; however, it may result in positive effects in particular, special conditions. The complexity of the study of the laws which govern the initial stress phenomenon yields form the necessity of taking into*

account the biomechanical, and biophysical-biochemical factors that may affect the operational process. Initial stress may provide information concerning the biomechanical anamnesis of each point in the body structure, as well as its evolution. Often, the history of such a body is unknown in the final stage, and very difficult to study in practice, so that such stress is generally unknown. Also, determining it analytically is neither an easy task to perform, nor at hand for any engineer. The issue of determining the initial stress is as a rule very complicated, while its potential solutions require theoretical investigation of the relevant biophysical and chemical processes. The present paper represents an approach to the origin and the factors that influence the apparition of initial stress, as well as to determining it theoretically.

30. THE CREEP OF ISOTROPIC MECHANICAL ELEMENTS SUBJECTED TO TENSION AND COMPRESSION

by Ion Florin POPA & Cornel MARIN

"Valahia" University of Târgovişte - Romania

***Abstract**: Le but de cette oeuvre est de présenter une description mathématique du phénomène de fluage des éléments mécaniques soumis à sollicitation d'étirage et de compression. Dans le cas de ce phènomène, la vitesse de déformation n'est plus une fonction linéaire de la contraction (loi de Newton et Bailey). La visquo-élasticité des structures analysées n'apparait plus comme un phènomène linéaire. C'est pour ça que pour l'analyse des phènomènes qui apparaissent à l'essai de traction-compression on tient compte d'un modèle visquo-élastique non-lineaire qui doit décrire la déformation des essais.*

31. NUMERICAL MODELLING OF TENSILE OF LINEAR VISCOELASTIC MECHANICAL ELEMENTS

by Ion Florin POPA & Cornel MARIN

"Valahia" University of Târgovişte - Romania

***Abstract**: Le but de cette oeuvre est de déterminer le comportement des éléménts de la construction des machines à lq sollicitation de traction, en supposant que le matériel dont ils sont constitués a un comportement visquo-élastique linéaire. Pour un tel milieu, on interpose les effects de la viscositéconform à la loi de Hooke. L'étude des phenoménes qui apparaissent à la traction, étant complexe, il est nécessaire tant la réalisation d'une description mathématique des phénomènes que l'établissement des modèles visquo-élastiques linèaire d'étude. Sur la base de ces modèles ou peut mettre en évidence très vettement les phenomènes distincts qui apparaissent pendant l'essai de traction: élasticité momentanée, élasticité rétardée, retour élastique instantané, déformation linéaire, déformation permanente*

Friction and Wear

38. DETERMINATION OF OPTIMUM SAMPLING CONDITIONS WHEN MEASURING SURFACE MICROTOPOGRAPHY

pp. 321 - 330

by Minodora RÎPĂ, Constantin SPÂNU & Virgiliu STOICA

"Dunărea de Jos" University of Galaţi - Romania

***Abstract**: The selection of measurement parameters (for example, the sampling interval) therefore relies on the subjective experiences of users, for most measurements of surface roughness performed by digital techniques. Determination of appropriate sampling conditions is achieved studying the sampling interval influence (using four sampling values), on the digital profile (from a visualization perspective), on the variation of three roughness parameters and on the bearing ratio curve and features related. Experimental results based on measurements carried out on two types of engineering surfaces (using a stylus instrument) are presented to demonstrate the effectiveness of the appropriate sampling interval.*

Contact Mechanics

loaded by point forces in its boundary. This paper complements the previous by pointing out the specific aspects of the stress states, the limits of applicability of solution and validates the previously obtained relations.

42. UPON SUPERPOSITION PRINCIPLE APPLIED TO A HALF-PLANE CONTAINING A CIRCULAR HOLE, LOADED ON THE BOUNDING STRAIGHT LINE

by Stelian ALACI & Emanuel DIACONESCU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: This paper aims to derive, by using the superposition principle, the relations for the stress state occurring in a half-plane containing a circular hole when a half elliptic distribution of normal load is applied on the straight boundary. A similar tangential distribution is then taken into account. Finally, the results of superposition principle are compared with those obtained by using Fourier series development of potential functions in bi-polar coordinates.*

43. BEHAVIOUR OF AN OPTIMISED CIRCULAR CONFORMAL CONTACT WITH LOAD LEVEL

by Marilena GLOVNEA & Emanuel DIACONESCU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: Many conformal contacts encountered in practice are modelled by an equivalent rigid punch having a constant cross-section pressed against an equivalent elastic half-space. In such a situation, the contact pressure reaches its minimum in the centre of contact area and tends towards infinity in contour points. This pressure riser diminishes the load carrying capacity of the contact and adequate design measures must be introduced to attenuate this effect. A widely recommended solution seeks to reach a constant pressure distribution over contact area. These authors proposed previously to modify the flat front surface of the punch in order to generate an uniform contact pressure at a nominal load and they derived analytical and numerical procedures to derive this punch optimum front surface. A new problem occurs now: it is required to find the pressure distribution, which occurs when such an optimised contact is subjected to other loads than the nominal. This paper deals with this problem for the simple case when the punch possesses a circular cross-section. Four contact domains are identified when the load increases. Initially, the contact behaves in a Hertz point contact fashion and then in a point non-Hertz one. When the outer radius of contact area equals the punch outer radius, the contact becomes conformal. This can be either under-nominal or over-nominal, as the applied load is less or exceeds the*

nominal load. The limits of load interval for each domain are found and for each domain equations for pressure distribution, outer radius of contact area, normal approach and stiffness are derived.

44. A NEW OPTIMISATION CRITERION FOR CIRCULAR CONFORMAL CONTACTS

by Emanuel DIACONESCU & Marilena GLOVNEA

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: A highly non-uniform contact pressure occurs in conformal or surface contacts. Feijoo and Fancello suggested to optimise these contacts such to obtain an uniform contact pressure. For an equivalent contact, Glovnea and Diaconescu developed a numerical method to optimise this way the front surface of the punch at a nominal load. Investigating the behaviour with load level of an optimised circular contact, they found that, as soon the load exceeds a limiting value, discontinuities in both stresses and displacements occur. A new optimisation criterion is proposed herein for circular surface contacts which assures continuous stresses and strains by generating a continuous pressure up to the maximum load. This consists of a central region with uniform pressure, surrounded by an annulus of elliptically decreasing pressure. The equation of the generatrix of punch surface that yields this pressure is expressed by two double integrals. These are solved numerically and the obtained optimum profile is approximated by an even polynomial function.*

45. RESIDUAL STRESSES IN LINE CONTACT IN CASE OF ISOTROPIC HARDENING MATERIALS

by Spiridon CRETU & Gabriel POPESCU

Technical University "Gh. Asachi" of Iasi - Romania

***Abstract**: The solution of problems in elastic-plastic rolling contact is important for many practical operations in the rail, gear and bearing industries. Under repeated rolling contact, a body may reach a steady state of either elastic or plastic shakedown. Although shakedown limits are important in structural design, a detailed knowledge of the residual stress field is critical for accurate fatigue life calculation. Numerous studies presented in literature deals with analytical or the finite element methods by using various plasticity models. Although the calculation of residual stresses by the finite element method is in much better agreement with measurements than analytical methods, it has the shortcomings of long computational time. A new analytical method was developed by an extension of the Merwin-Johnson model in case of materials with linear or non-linear isotropic hardening behavior. Results obtained were compared with theoretical and experimental data presented in literature and a quite good agreement has been noticed in all cases.*

material by a particular load function. The expressions for the contact area and the normal approach are deduced and numerically solved for a loading cycle. The results reveal the effect of retardation time upon the variation of the contact elements.

49. L'INFLUENCE DES DEFORMATIONS ELASTIQUES SUR LES CONTRAINTES TANGENTIELLES A L'INTERFACE D'UN CONTACT

by Luminiţa IRIMESCU, Stelian ALACI & Emanuel DIACONESCU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: Ce travail étudie l'effet de la spatialité de surface de contact sur les contraintes tangentielles à l'interface d'un contact en roulement, chargé normalement. Afin d'évaluer ces contraintes, le micro-glissement relatif est calculé à partir des équations cinématiques fondamentales. Les résultats obtenus montrent la présence du micro-glissement sur l'aire de contact et l'existence des certaines zones avec micro-glissement positif ou négatif, séparés par lignes de non glissement. Les contraintes tangentielles sont obtenues numériquement pour contacts circulaires avec différentes géométries.*

50. LE FROTTEMENT INDUIT PAR MICRO-GLISSEMENT A L'INTERFACE D'UN CONTACT EN ROULEMENT

by Luminiţa IRIMESCU [1], Emanuel DIACONESCU [1] & Yves BERTHIER [2]

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[2] Laboratoire de Mécanique des Contacts, INSA Lyon

***Abstract**: L'article présente un model théorique pour calculer le coefficient de frottement en roulement à l'interface d'un contact elliptique. La géométrie de contact considéré a été celle d'un contact elliptique général galet-plan. Les résultats numériques obtenus montrent une variation du coefficient de frottement en roulement sur l'aire de contact en fonction du micro-glissement induit par les déformations élastiques.*

60. THEORETICAL CONSIDERATIONS CONCERNING THE EFFECT OF TYPICAL PARAMETERS DEFINING THE SURFACE STATE UPON FATIGUE BEHAVIOUR OF STEELS

pp. 495 - 506

by Ioan Valentin MARIN, Aurelian VLASE & Gina STOICA

Polytechnic University of Bucharest – Romania

Abstract: *L'etude sur les paramètres qu'ils peut avoir une influence sur les propriété en fatigue des materiaux de construction. Plusieurs aspects sont à considérer pour rendre compte du rôle en fatigue du l'état de surface:*

- *aspect géométrique: l'état de surface d'une pièce, produit par ses conditions de réalisation (usinage, formage), correspond à des irrégularité directement à la tenue à la fatigue. Les mesures de rugosité permettent de quantifier l'état de surface par l'intermédiaire du paramètre rugosité totale. Ce coefficient correspond à la variation entre maximum et minimum absolus enregistrés sur la plage de palpage considérée;*
- *aspect mécanique: la rugosité seule ne permet pas d'appréhender totalement les effets de la mise en oeuvre d'une pièce. En fonction du procédé, un écrouissage superficiel du métal peut se produire qui modifie les propriétés locales du métal dans la zone la plus sollicitée où l'amorçage en fatigue peut se produire. Cet écrouissage s'accompagne généralement de l'apparition d'une champ de contraintes résiduelles, soit de traction, soit de compression. La tenue à la fatigue de la pièces peut dépendre très largement de l'écrouissage et des contraintes résiduelles de l'opération de mise en oeuvre;*
- *aspect métallurgique: la structure du matériau peut être altérée au cours de sa mise en oeuvre; un traitement thermique mal conduit peut produire un phénomène de decarburation superficielle provoquant un adoucissement du métal dans une zone fortement sollicitée; une usinage trop violent peut transformer en surface le métal et modifier ses propriétés d'emploi.*

Les trois aspects sont pris en compte: l'influence de la rugosité, l'influence des contraintes résiduelles et l'influence du durcissement de la surface sur la tenue à la fatigue des materiaux de construction.

61. EXPERIMENTAL STUDIES CONCERNING CYCLIC AND MONOTONOUS HARDENING OF STAINLESS STEELS

pp. 507 - 516

by Ioan Valentin MARIN, Aurelian VLASE & Gina STOICA

Polytechnic University of Bucharest – Romania

Abstract: *La majorité des ruptures de pieces mécanique observées en service correspond à un endommagement par fatigue. Ce type d'endommagement est dû à l'application d'effort cyclique et il peut se produire pour des contraintes nominales appliquées bien inférieurs à la limite d'elasticité du matériau.*

La particularité de ce phénomène reste dans sa nature progressive qui amène très souvent à une rupture brutale de la pièce. Cet article concerne les aspects experimentales sur la tenue en fatigue de l'acier inoxydable 304L. Deux types d'essais ont été menés:

- *des essais à charge imposée;*
- *des essais à seuil de déplacement imposé et asservissement en charge.*

Les cycles sont réalisés à chargement croissant par palier. Pour chaque palier, les boucles d'hystérésis force - déplacement sont enregistrées.

62. CINEMATIQUES RELATIVE INDUITE A L'INTERFACE D'UN CONTACT DU AU MICRO-GLISSEMENT. I. CONTACTS CIRCULAIRES

by Luminiţa IRIMESCU & Emanuel DIACONESCU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: L'article présente des considérations théoriques concernant l'influence des déformations élastiques sur le glissement partiel sur une aire circulaire de contact avec roulement. Des différentes géométries de contact ont été considérées: galet-cylindre, sphère - sphère et sphère – plan. Les résultats montrent qu'il y a des zones de micro glissement dans des différentes situations.*

63. CINEMATIQUE RELATIVE INDUITE A L'INTERFACE D'UN CONTACT DU AU MICRO-GLISSEMENT. II - CONTACTS ELLIPTIQUES

by Luminiţa IRIMESCU & Emanuel DIACONESCU

"Stefan cel Mare" University of Suceava - Romania, Department of Applied Mechanics

***Abstract**: L'article présente l'analyse théorique de l'influence des conditions de contact sur le glissement partiel sur une aire elliptique de contact avec roulement. Les suivantes géométries de contact ont été considérées: galet - cylindre, galet - plan et sphère – cavité conforme. Les résultats montrent qu'il y a des zones de micro-glissement même dans l'absence du glissement totale.*