

PROCEEDINGS SYROM 2005

CONTENTS - VOLUME I

Section 1

PLANAR MECHANISMS

01. Unitary method for kinematic synthesis of mechanisms with rotary disc – cam, Antonescu O., Antonescu P., Martineac, A.....	01
02. The experimental determination of the kinematical parameters of the shaping-machine at the function with shocks, Bogdan M.-L., Bogdan C.....	07
03. The effect of shocks on the kinematical parameters of the shaping-machine, Bogdan M.-L., Bogdan C.....	11
04. Kinematic optimization of a windshield wiper mechanism, Buta A.-C., Alexandru C.....	17
05. Modeling and kinematic analysis of cam mechanisms as multibody systems, Ciobanu D., Visa I.....	21
06. Kinematic analysis of a bar mechanism demoulding system for injection moulds, Claveria I., Fernandez A., Javierre C., Aisa J.....	27
07. Triz applied to function generating mechanisms, Cretu S.....	33
08. On the contour method of kinematic analysis of the 2 nd class mechanisms, Dranga M., Dugaesescu I.....	39
09. The forms of motion equations in mechanisms of two mobility degrees using the transmission functions, Iordache V., Grecu B.....	43
10. Kinematic and static – kinetic modeling for computerized analysis of second class planar mechanisms, Iordache V., Grecu C., Grecu B.....	47
11. Development of servo driven four bar mechanism for constant speed application, Jain V., Dhuri K.D., Seshu P., Seth B.....	53
12. Theoretical considerations and experimental results upon pulling capacity of tangential belt drives, Jula M., Madaras L.....	59
13. Структурирование схем шарнирных рычажных механизмов на основе обобщенных структурных модулей, Kuzlyakina V.V., Slepenco I.N.....	63
14. Преподавание дисциплины «теория механизмов и машин» в компьютерных технологиях, Kuzlyakina V.V., Zaitov D.V.....	73
15. On the synthesis of the cam mechanisms with tangential oscillating follower, Lovasz E.C., Perju D., Carabas I., Zabava E., Modler K.-H.....	81
16. The structure, the kinematic and the verification of a conicograph mechanism- boguslavskii type, Luca L., Popescu I.....	87
17. The analysis of ship cover mechanical structure using an unconventional algorithm, Mereuta, E.....	93
18. Position analysis in polynomial form of assur groups of class 3 and order 3 with two and three prismatic joints, Mitsi S., Bouzakis K.-D., Mansour G., Popescu I.....	99
19. Analyse mechanische strukturen für einfache fortbewegungen, Modler K.-H., Margineanu D., Perju D., Lovasz E., Fernel V.....	105
20. On the movement rule of the cutters used in processing of the cams with given groove, Pandrea N., Popa D., Popa C.M.....	111
21. On the double action mechanisms, Perju D., Lovasz E.C., Modler K.-H.....	117
22. Contributions at the dynamic of cams, Petrescu F.I., Petrescu R.V.....	123
23. Determining the dynamic efficiency of cams, Petrescu F.I., Petrescu R.V.....	129
24. An original internal combustion engine, Petrescu F.I., Petrescu R.V.....	135

25. <i>Determining the mechanical efficiency of Otto engine's mechanism,</i> Petrescu R.V., Petrescu F.I.....	141
26. <i>Forschungen über der ausgleich die schubkurbelmechanismus,</i> Popa C., Dinu I., Buruga I.....	147
27. <i>Methods for the design of cams in translation motion,</i> Popovici G.A., Oprisan C.....	153
28. <i>Autonome bewegungen totalzwangläufiger koppelgetriebe mit konstanter kinetischer energie,</i> Rehwald W., Luck K.....	157
29. <i>Considerations regarding the control mechanisms in mechatronics,</i> Rusu C., Maties V., Besoiu S.....	167
30. <i>The synthesis of linkages – an optimization problem,</i> Simionescu I.....	171
31. <i>Theoretical researches on rotary actuators,</i> Stanescu C., Carstoiu A., Surcel V., Bebe C.....	175
32. <i>On the coulomb–damped belt drive system,</i> Stanescu N.D.....	179
33. <i>Studies on kinematic modeling of planar mechanisms,</i> Sticlaru C., Davidescu A., Mesaros-Anghel V.....	183
34. <i>Simple mechanical clutch with multiple functions,</i> Stroe I.....	189
35. <i>The study regarding the flywheel of the crank mechanical press selection,</i> Tabara I.....	195
36. <i>Variable structure mechanisms design,</i> Tanik E., Soylemez E.....	201
37. <i>Computer-aided training in science of mechanisms,</i> Tempea I., Spiridon L., Neacsu M.....	209
38. <i>Mathematical models of dynamic of mechanisms with sufficient elastic parts,</i> Ualiyev G., Ualiyev Z.G.....	215
39. <i>Computational analysis for a particular case of planar bar mechanisms with dyads and triads,</i> Ungureanu C.A., Popa G., Boiangiu G.....	219
40. <i>Kinematic synthesis of multibody system type linkages,</i> Visa I., Antonya C.....	223

Section 2 SPATIAL MECHANISMS

41. <i>Some technical applications of fractals,</i> Comanescu D., Comanescu A.	229
42. <i>On the structural effects of the mechanisms redundant constraints,</i> Diaconescu D., Jaliu C., Saulescu R.....	233
43. <i>The influence of structural defects on the mechanisms transmission functions and on its durability,</i> Jaliu C., Neagoe M., Ciobanu D.....	239
44. <i>Kinematic synthesis of spatial lever motion-generating mechanisms by use of initial kinematic chain,</i> Moldabekov M., Kosbolov S., Bekenov E.....	245
45. <i>The kinematic analysis of spatial 6r mechanism</i> Moldabekov M.M., Murushkin S.A.....	251
46. <i>Qualitative and quantitative aspects of dynamic mechanisms with non-holonomic links,</i> Plosceanu B., Stanila R.....	257
47. <i>The check-up calculus for the locomotive's handbrake system,</i> Popa G., Tarus B., Arsene S.....	263
48. <i>Research on the gears used in the Romanian popular technique,</i> Popescu A.....	271
49. <i>The structure and kinematics of a sawmill mechanism used in the Romanian folk technique,</i> Popescu A.....	277
50. <i>The machines, structures and mechanisms on the Traian's column,</i> Popescu I., Ceccarelli M.....	283
51. <i>On cylindrical cams design,</i> Sezonov I., Comanescu D., Comanescu A.....	289
52. <i>Double pyramidal linkages</i> Wohlhart K.....	293

CONTENTS VOLUME II

Section 3

COMPLEX MECHANISMS

01. Contributions to synthesis of complex mechanisms used for opening / closing of windows on automotive side doors, Antonescu P., Mihalache D., Antonescu O.....	301
02. On the priority of the modulus versus the center distance predimensioning of the evolventical gear calculus, Argeseanu V., Mezaros Angel V., Madaras L.....	307
03. Dynamic analysis of spur gears with tooth profile modifications, Atanasiu V., Leohchi D.....	313
04. The study of the simultaneous gearing and friction losses in the frontal transmission with balls, Bara M., Teutan E.....	319
05. Vibropercussions in gearings, Bratu I., Rus A.....	325
06. Kinematic analysis of a mechanism for conversion of a yarn into fabric on a modern tricot machine, Cataneanu A., Bagnaru D.G., Cataneanu M.....	329
07. On the optimization of the efficiency for simple planetary reducers, Diaconescu D., Saulescu R.....	335
08. On values of several parameters of mechanical transmissions in their technical evolution, Dobre G., Mirica R-F., Miloiu Gh.....	341
09. Parameter design and dynamic analysis of ship type wave power generation device, Jiang S., Wang X., Lin J.....	347
10. Kineto - elastodynamic analysis on the flat mechanism of the weavers bench, Khajiyeva L., Kydyrbekuly A., Saveljev E.....	353
11. Kinematic synthesis of the rack and pinion multifunction mechanism, Li T.-J., Zhang X.-F.....	357
12. Sur la modelisation du chargement des transmissions a roues dentees, Mirica R.F., Dobre G.....	363
13. La dynamique des réducteurs différentiels non desmodromes, dans le contexte de l' école des mécanismes de Galati, Oranescu A., Bejenaru S., Rus M., Arama V.....	369
14. Kinematic analysis and experimentation of a cam mechanism, Ottaviano E., Figliolini G.....	375
15. Determining the dynamic efficiency of gears, Petrescu R.V., Petrescu F.I.....	381
16. Design of conic toothed clutch, Raikhman G.....	387

Section 4

MECHANISMS IN TRANSPORTS

17. Virtual stand for simulating a light-duty truck, Alexandru C.....	393
18. Optimization studies for the gear pair: curved rack – eccentric sector from the steering box, Alexandru P., Ceausescu B.....	399
19. Virtual testing of the metal pushing V-belt used on automotive CVT, Antonescu O.....	405
20. Kinematical synthesis of the complex planetary mechanisms used as the automation transmissions, Antonescu O., Antonescu P., Margine A.....	411
21. About vibrations of a viscoelastic thin plane plate applied to the study of the vehicle bodywork vibrations, Bagnaru D.G., Cataneanu A.....	417
22. A mathematical model for impact study “projectile-gun barrel” during the shooting, Balasoiu S., Coman A., Barbu C.....	423

23. <i>The determination of the kinematics of the landing gear,</i> Bogdan C., Tempea I., Bogdan M.....	429
24. <i>Study on the influence of the parallel displacement motion over the vibrations of the composite bars,</i> Bolcu D., Tarnita D.....	435
25. <i>Study on the vibrations of a mechanical system undergoing linear viscous-elastic bindings,</i> Bolcu D., Tarnita D.....	439
26. <i>The structural and kinematic elements of planetary gear for automatic gearboxes,</i> Buda L., Tabara I.....	443
27. <i>Influence of wear concerning the braking capacity for a unique symmetrical shoe brake rigging in case of two axles railway vehicles,</i> Cruceanu C.....	449
28. <i>Aspects about projecting the axle-tree symmetrical shoe brake rigging for two axles railway vehicles,</i> Cruceanu C.....	455
29. <i>Parametric design of a gear pair in proengineer,</i> Davidescu A., Sticlaru C.....	461
30. <i>The possibilities of selecting the gear ratios in an automatic transmission according to the driving conditions,</i> Dragne F., Bataus M., Oprean M.....	465
31. <i>Torsional vibrations in vehicle drive line system,</i> Dukkipati R., Srinivas J.....	471
32. <i>An experimental study of the rotating mirror laser scanning devices,</i> Duma V. F.....	477
33. <i>Synthesis and simulation of a multilink suspension mechanism,</i> Figliolini G., Rea P.....	483
34. <i>CFD study on the characteristics of the externally pressurized gas bearing,</i> Fu K., Zhu Y., Zhang M.....	489
35. <i>Research concerning the structure of pantograph mechanisms used for electrical locomotive,</i> Hacman L.....	493
36. <i>Research concerning the kinematics of pantograph mechanisms used for electrical locomotives,</i> Hacman L.....	499
37. <i>Contributions for modeling and simulation of some aspects regarding the influence of the draught speed on some working qualitative index numbers in the separation systems,</i> Ion E.E., Haraga G., Ion G.C....	505
38. <i>Experimental studies on some aspects regarding noise and vibrations levels of electrical household appliances parts,</i> Ion G.C., Ion E.E., Ion C.....	511
39. <i>Adaptive stepless gearing</i> Ivanov K.....	517
40. <i>Исследование роторной системы с автобалансирующим устройством с учетом динамических характеристик двигателя,</i> Kydyrbekuly A.B., Kanguzhin B.E., Imankul S.T....	523
41. <i>Détermination des positions d'un mécanisme du train d'atterrissage escamotable de la troisième classe (I),</i> Lazar I., Tempea I.....	529
42. <i>Analyse des vitesses et des accélérations d'un mécanisme du train d'atterrissage escamotable de la troisième classe (II),</i> Lazar I., Tempea I.....	535
43. <i>Some aspects of the elastic wheel/rail bi-contact,</i> Mazilu T.....	541
44. <i>Self-excited vibrations of THE railway wheels RUNNING in tight curves,</i> Mazilu T.....	547
45. <i>Study concerning the torsion stresses on the driving axle of the romanian railways' 5100 kw electric locomotive,</i> Popa G., Tarus B.....	553
46. <i>Simulate the inverse cinematic of the acc mobile robot,</i> Pozna C.....	557
47. <i>An original calculus of a viscous automotive transmission,</i> Predescu A.....	563
48. <i>Some aspects concerning the influence of the viscous coupling's thermal behaviour on the transmitted torque,</i> Predescu A., Laurian T.....	567
49. <i>Contact phenomena for bogies with radial steering axles running in curves,</i> Sebesan I.....	573
50. <i>Considerations on the determinations of the functional characteristics of the electric motor used to the mechanical presses drive,</i> Tabara I.....	577

CONTENTS VOLUME III

Section 5

Manipulators and Robots

01. "Species" of robots, Adir G., Adir V., Adir A.....	581
02. An extension of the gripping mechanisms with jaws, Alexandru P., Stancescu C.....	587
03. Solving the finite displacement problem of parallel manipulators, Alonso A., Altuzarra O., Macho E., Hernandez A.....	593
04. Manipulators used as endoscopic instrumentations of the urinary tract, Antonescu P., Andrei S., Antonescu O.....	599
05. Synthesis of the new orientation mechanisms (wrist), Antonescu P., Antonescu O., Dugaesescu I.....	605
06. The pattern of movement on jumping of frogs (rana type), Buzea E. M.....	611
07. Static balancing of mechanical systems used in medical engineering field, Ciupitu L., Simionescu I.....	617
08. Biped platform kinematic and dynamic parameters for motion control, Comanescu A., Comanescu D.....	623
09. Reactive behaviour of an autonomous mobile robot obtained by learning, Cononovici S. B.....	631
10. Design of an adaptive headlights system for automobiles, Crisan R., Maties V., Tatar O.....	637
11. Исследование динамики машин-автоматов с механизмами переменной структуры на основе их векторной циклограммы, Djomartov As., Djomartov Ab.....	643
12. An autonomous mobile system, Dolga V., Bacican C.....	649
13. Mini-robots for educational purposes, Doroftei I.....	655
14. A strategy of wave gait for a modular walking robot traversing an unarranged terrain, Ion I., Dinu C., Vasile A.....	661
15. About kinematics of the a type guiding in three points parallel robots, Itul T.P., Pislă D.L., Balint S.T.....	667
16. On the enumeration of schoenflies motion generators, Lee C.-C., Herve J.M.....	673
17. Synthesis of the mechanisms satisfying position and velocity constraints, Leohchi D., Oprisan C.....	679
18. Design and analysis of a novel high-speed and high-precision planar parallel robot, Li J., Liu Y., Sun L.....	685
19. Thermal transduction in microelectromechanical systems (mems), Lobontiu N., Mandru D., Noveanu S.....	691
20. Information links, flexibility and reconfigurability of the mechatronic systems, Maties V., Szabo F.S., Besoiu S.....	697
21. Virtual laboratory - an efficient tool in the study of the mechanisms, Maties V., Szabo F.S., Besoiu S.....	703
22. A multi-objective optimum robot base placement using a hybrid genetic algorithm, Mitsi S., Bouzakis K.-D., Sagris D., Mansour G.....	709
23. Joint level calibration of the parallel robots, Neagoe M., Diaconescu D., Cretescu N.....	715
24. Identification of the geometrical errors of a stewart platform, based on accuracy experimental testing, Neagoe M., Jaliu C., Saulescu R.....	721
25. Singularities analysis for a planar redundant manipulator, Nitu I., Racovita W., Secara F.....	727
26. Theoretical and experimental research by a manipulator mechanism with aesthetical effects, Ocroteala I., Ionita F.....	733

27. Method in plückerian coordinates for the linear elastic calculus of the stewart platforms, Pandrea M.....	739
28. Method in plückerian coordinates for the kinematic calculus of the stewart platforms, Pandrea M., Stanescu N.D.....	743
29. Synthesis and optimization of an underactuated finger mechanism, Rea P., Figliolini G.....	747
30. Mechanism for the prosthesis of hand, Receau D.....	753
31. Electronic interface for a pneumatic gripper, Rizescu C.I, Rizescu D.....	757
32. Pneumatic gripper for cylinder objects, Rizescu D., Rizescu C.I.....	763
33. Planning and predicting motions in robot hand manipulation, Rus A., Bratu I., Tataru B.....	767
34. A two degree – of – freedom robotic exerciser for rehabilitation, Rusu C., Mandru D., Maties V.....	773
35. Performance indicators and velocity ellipsoids using nondimensional jacobian for parallel manipulators, Salgado O., Petuya V., Pinto C., Amezuza E.....	779
36. Restriction surface avoidance by a planar redundant manipulator using a control strategy based on the repulsive potential field, Secara C., Nitu I., Cononovici S.-B.....	785
37. Mechanism used for positioning electronic components during the test process, Spanu A.....	791
38. Mechanics of a planetary gear train for robotics, Staicu S.....	797
39. Modélisation dynamique et simulation du manipulateur parallèle TTT, Staicu S., Ocnărescu C.....	803
40. The structural and kinematic synthesis and analysis, functional simulation and testing for an anthropomorphic gripping mechanism for robots, Stăretu I., Aron C.....	809
41. Synthesis, analysis, design and functional simulation for a gripper with jaws, Stăretu I., Ionescu M.....	815
42. Actual trends in design and experimental testing of stents, Tanase C.....	821
43. Contributions to the biped platforms motion control by neural networks, Tanase C., Gachon C., Delassus P., Comanescu A.....	827
44. In-pipe mobile minirobots design structures, Tatar O., Mandru D., Crisan R.....	833
45. The command and control of in-pipe inspection mobile minirobots with adaptive structure, Tatar O., Stan S.....	839
46. Kinematical and dynamical solution of the robot mechanical system, Vavrincikova V., Baranova E.....	845
47. Modeling of kinematical parameters during gait for human subjects, Zahariuc A., Munteanu F., Merticaru V., Macovei M.....	849
48. Control of a four rotors aerial robot, Zemalache Meguenni K., Beji L., Maaref H.....	855
49. Computer aided kinematic modelling of the mobile mechanical systems Cherciu M., Dumitru N.,	861
50. The modelling and simulation of the dynamic behaviour for the transmissions in the industrial robots structure, Dumitru N., Cherciu M.....	867
51. Software integration and optimum design on gear systems, Cananau S.....	873
52. Finite element analysis and optimum design on planetary gear system, Cananau S.....	877
53. The kinetics of the safety catches coupling in vertical transportation installations, Tisan V., Gramovschi I.....	881
54. Аналитическая кинематика и динамика механизма Ассура, Moldabekov M.M., Tuleshov A. K.....	887
55. Modeling of tolerances in six links mechanisms analysis, Oprisan C., Popovici A.G.....	893