



Contents of Volume 20, 2020

Volume 20	Number 1	2020
PERSONAGE IN SCIENCE		
Professor V.M. Starzhinskii. To the 100th Birthday Anniversary	1	
<i>A.A. Martynyuk, N.A. Izobov, A.G. Mazko and V.I. Zhukovskii</i>		
Generalized Monotone Method for Nonlinear Caputo Fractional Impulsive Differential Equations	3	
<i>Y. Bai and A.S. Vatsala</i>		
Control Design for Non-Linear Uncertain Systems via Coefficient Diagram Method: Application to Solar Thermal Cylindrical Parabolic Trough Concentrators	21	
<i>Z. Fenchouche, M. Chakir, O. Benzineb, M.S. Boucherit and M. Tadjine</i>		
Adaptive Sliding Mode Control Synchronization of a Novel, Highly Chaotic 3-D System with Two Exponential Nonlinearities	38	
<i>F. Hannachi</i>		
Motion Control Design of UNUSAITS AUV Using Sliding PID	51	
<i>T. Herlambang, S. Subchan, H. Nurhadi and D. Adzkiya</i>		
Alternative Legendre Functions for Solving Nonlinear Fractional Fredholm Integro-Differential Equations	61	
<i>Khawlah H. Hussain</i>		
On the Boundedness of a Novel Four-Dimensional Hyperchaotic System	72	
<i>S. Rezzag</i>		
Periodic Solutions in Non-Homogeneous Hill Equation	78	
<i>A. Rodriguez and J. Collado</i>		
Estimates of Accuracy for Asymptotic Soliton-Like Solutions to the Singularly Perturbed Benjamin-Bona-Mahony Equation	92	
<i>V. H. Samoilenko, Yu. I. Samoilenko and L. V. Vovk</i>		
Oscillation Criteria for Delay Equations with Several Non-Monotone Arguments	107	
<i>I. P. Stavroulakis, Zh. Kh. Zhunussova, L. Kh. Zhunussova and K. Dosmagulova</i>		
Volume 20	Number 2	2020
Solving a System of Nonlinear Fractional Partial Differential Equations Using the Sinc-Muntz Collocation Method	119	
<i>Mahmood Shareef Ajeel, Morteza Gachpazan and Ali Reza Soheili</i>		
Some Problems of Attitude Dynamics and Control of a Rigid Body	132	
<i>A. Yu. Aleksandrov, A. A. Martynyuk and A. A. Tikhonov</i>		
Chaos in New 2-d Discrete Mapping and Its Application in Optimization	144	
<i>R. Bououden, M. S. Abdelouahab and F. Jarad</i>		
Sensorless Two Series Connected Quasi Six-Phase IM Based Direct Torque Control for Torque Ripples Minimization	153	
<i>Y. Chedni, DJ. Boudana, A. Moualdia, L. Nezli and P. Wira</i>		

Analysis of the Dynamics of a Two-Degree-of-Freedom Nonlinear Mechanical System under Harmonic Excitation	168
<i>Akram Khalil Cheib, V. E. Puzyrov and N. V. Savchenko</i>	
Numerical Approximation of the Exact Control for the Vibrating Rod with Improvement of the Final Error by Particle Swarm Optimization	179
<i>A. Khernane</i>	
The Finite Element Method for Nonlinear Nonstandard Volterra Integral Equations	191
<i>M. Khumalo and A. Dlamini</i>	
Control of a Novel Class of Uncertain Fractional-Order Hyperchaotic Systems with External Disturbances via Sliding Mode Controller	203
<i>B. Labed, S. Kaouache and M. S. Abdelouahab</i>	
Stochastic Dengue Mathematical Model in the Presence of Wolbachia: Exploring the Disease Extinction	214
<i>M. Z. Ndiu and A. K. Supriatna</i>	

Volume 20

Number 3

2020

Existence of Weak Solutions for Nonlinear p -Elliptic Problem by Topological Degree Method	229
<i>A. Abbassi, C. Allalou and A. Kassidi</i>	
Unified Continuous and Discrete Lur'e Systems Stability Analysis Based on Augmented Model Description	242
<i>A. Ayadi, K. Dchich, B. Sfaihi and M. Benrejeb</i>	
Dynamical Analysis, Stabilization and Discretization of a Chaotic Financial Model with Fractional Order	253
<i>R.R. Barkat and T. Menacer</i>	
Sinc-Galerkin Method for Solving Higher Order Fractional Boundary Value Problems	267
<i>A. Darweesh and K. Al-Khaled</i>	
Optimization of Linear Quadratic Regulator with Tracking Applied to Autonomous Underwater Vehicle (AUV) Using Cuckoo Search	282
<i>T. Herlambang, D. Rahmalia, H. Nurhadi, D. Adzkiya and S. Subchan</i>	
Natural Daftardar-Jafari Method for Solving Fractional Partial Differential Equations	299
<i>H. Jafari, M.N. Ncube, S.P. Moshokoa and L. Makhubela</i>	
Increased Order Generalized Combination Synchronization of Non-Identical Dimensional Fractional-Order Systems by Introducing Different Observable Variable Functions	307
<i>S. Kaouache, N.E. Hamri, A.S. Hacimliyan, E. Kandiran, B. Deruni and A.C. Keles</i>	
Gradient Optimal Control Problems for a Class of Infinite Dimensional Systems	316
<i>M.O. Sidi and S. A. Beinane</i>	
Absolutely Unstable Differential Equations with Aftereffect	327
<i>V.Yu. Slyusarchuk</i>	
Stability of the Artificial Equilibrium Points in the Low-Thrust Restricted Three-Body Problem when the Bigger Primary is a Source of Radiation	333
<i>Md. Sanam Suraj, Amit Mittal and Krishan Pal</i>	
Obituary for Nelly Nikitina (1939 – 2020)	345

Volume 20

Number 4

2020

Fixed Point Regions, Unified Construction of Fixed Point Mappings for Integral, Quadratic, and Fractional Equations	347
<i>T. A. Burton and I. K. Purnaras</i>	
An Enhanced Bi-Directional Chaotic Optimization Algorithm	365
<i>F. Derouiche and T. Hamaizia</i>	
Speed Sensorless Direct Torque Control Strategy of a Doubly Fed Induction Motor Using an ANN and an EKF	374
<i>T. Djellouli, S. Moulahoum, A. Moualdia, M.S. Bouchrit and P. Wira</i>	
Solving Laplace Equation within Local Fractional Operators by Using Local Fractional Differential Transform and Laplace Variational Iteration Methods	388
<i>H. K. Jassim, J. Vahidi and V. M. Ariyan</i>	
Solution to the Critical Burgers Equation for Small Data in a Bounded Domain	397
<i>M. B. Kania</i>	
Application of the Direct Power Control Strategy in a Shunt Active Filter by Exploiting the Solar Photovoltaic Energy as a Continuous Source	410
<i>A. Morsli, A. Tlemçani, A. Krama, A. Abbadi, L. Zellouma and H. Nouri</i>	
Uniqueness of Solution to the von Karman Equations with Free Boundary Conditions	425
<i>J. Oudaani, A. El Mouatasim and B. El-Aqqad</i>	
Stability of the Artificial Equilibrium Points in the Low-Thrust Restricted Three-Body Problem when the Smaller Primary is an Oblate Spheroid	439
<i>Md. Sanam Suraj, Amit Mittal, Krishan Pal and Deepak Mittal</i>	
General Simplex Method for Fully Fuzzy Linear Programming with the Piecewise Linear Fuzzy Number	451
<i>M. Z. Tuffaha and M. H. Alrefaei</i>	
Contents of Volume 20, 2020	461