

CONTENTS

Image Processing and Earth Remote Sensing

1. Identification of thawed and frozen soil state in some Siberia regions by multi-temporal Sentinel 1 radar data in 2017-2018 N V Rodionova	1-10
2. Vegetation Drought Dynamic Analysis in European Russia M S Boori, R Paringer, K Choudhary and A Kupriyanov	11-22
3. Parameter space dimension reduction of an adaptive interpolator during multidimensional signal differential compression A I Maksimov, M V Gashnikov	23-30
4. Interpolation of multidimensional signals using the reduction of the dimension of parametric spaces of decision rules M V Gashnikov	31-40
5. Double stochastic wave models of multidimensional random fields V R Krasheninnikov, A U Subbotin	41-47
6. Human action recognition using dimensionality reduction and support vector machine L V Shiripova, E V Myasnikov	48-53
7. Applying doubly stochastic filters to evaluate the dynamics of object sizes on satellite image sequences V E Dementyev, D S Kondratyev	54-59
8. Groundwater Potential Zones in Relation to Catchment Condition in Orenburg, Russia K Choudhary, M S Boori and A Kupriyanov	60-65
9. Public transport route planning in the stochastic network based on the user individual preferences A A Borodinov, A S Yumaganov and A A Agafonov	66-71
10. Optimal filtering of multidimensional random fields generated by autoregressions with multiple roots of characteristic equations N A Andriyanov, K K Vasiliev	72-78
11. Solution for the problem of the parameters identification for autoregressions with multiple roots of characteristic equations N A Andriyanov, M N Sluzhivyi	79-85
12. A new real-time method for finding temporary and permanent road marking and its applications R V Dosaev, K I Kiy	86-96
13. Adaptive interpolation of multidimensional signals for compression on board an aircraft N I Glumov, M V Gashnikov	97-102
14. Adaptation of the mathematical apparatus of the Markov chain theory for the probabilistic analysis of recurrent estimation of image inter-frame geometric deformations G L Safina, A G Tashlinskii and M G Tsaryov	103-108

15. Algorithm for detecting spherulite marker in human blood serum facies O E Malenova, L I Trubnikova, A S Yashina and M L Albutova	109-113
16. Convergence characteristics at stochastic estimation of image inter-frame deformations A G Tashlinskii, A V Zhukova and D G Kraus	114-120
17. Comparative analysis of segmentation algorithms for the allocation of microcalcifications on mammograms Yu A Podgornova, S S Sadykov	121-127
18. Development of the technique for automatic highlighting ranges of interest in lungs x-ray images N Yu Ilyasova, T A Chesnokova	128-133
19. Development of a Method of Terahertz Intelligent Video Surveillance Based on the Semantic Fusion of Terahertz and 3D Video Images A A Morozov, O S Sushkova, I A Kershner and A F Polupanov	134-143
20. A method of iterative image normalization for tasks of visual navigation of UAVs M O Elantcev, I O Arkhipov and R M Gafarov	144-152
21. Method for reconstructing the real coordinates of an object from its plane image V N Nesterov, V M Mukhin and D V Nesterov	153-159
22. Selection in a 3D microtomographic image the region with the highest quality A S Kornilov, I V Safonov, A V Goncharova and I V Yakimchuk	160-168
23. Accuracy analysis of 3D object reconstruction using point cloud filtering algorithms A N Ruchay, K A Dorofeev and V V Kalschikov	169-174
24. Early diagnosis of a developing biosystem using acousto-optic imaging A B Burlakov, A S Machikhin, D D Khokhlov, V I Kuzmin, A F Gadzaov, D L Tytik, S A Busev, V E Kasatkin and, L A Sleptsova	175-179
25. Neural network technology to search for targets in remote sensing images of the Earth N S Abramov, A A Talalayev, V P Fralenko, O G Shishkin and V M Khachumov	180-186
26. Nonlinear analysis of the degree of order and chaos of morphology of porous silicon nanostructures Z Zh Zhanabaev, T Yu Grevtseva, K A Gonchar, G K Mussabek, D Yermukhamed, A A Serikbayev, R B Assilbayeva, A Zh Turmukhambetov and V Yu Timoshenko	187-197
27. Analysis of the preferences of public transport passengers in the task of building a personalized recommender system A A Borodinov, V V Myasnikov	198-205
28. Algorithm for constructing three-dimensional Barcodes to represent nD spatial objects in GIS D E Andrianov, S V Ereemeev and Y A Kovalev	206-210

29. Tree state category identification for boreal area conifers using global features estimation by fuzzy logic approach A S Pyataev, A Y Redkin and A V Pyataeva	211-215
30. Automatic search for vanishing points on mobile devices E V Myasnikov	216-221
31. Optimal tuning of the contour analysis method to recognize aircraft on remote sensing imagery E N Dremov, S Yu Miroshnichenko and V S Titov	222-232
32. Recognition of forest and shrub communities on the base of remotely sensed data supported by ground studies A Y Denisova, L M Kavelenova, E S Korchikov, A V Pomogaybin, N V Prokhorova, D A Terentyeva, V A Fedoseev and N V Yankov	233-242
33. Image clustering by autoencoders A S Kovalenko, Y M Demyanenko	243-249
34. The peculiarities of interaction between the end-user and the remote sensing system for spatial objects detection and recognition R V Brezhnev, Yu A Maglinets, K V Raevich and G M Tsibulsky	250-257
35. The image series forgery detection algorithm based on the camera pattern noise analysis N I Evdokimova and V V Myasnikov	258-263
36. Automatic detection of constructions using binary image segmentation algorithms E A Dmitriev, A A Borodinov, A I Maksimov and S A Rychazhkov	264-268
37. A technique for detecting concealed objects in terahertz images based on information measure D M Murashov, A A Morozov and F D Murashov	269-274
38. Creation of digital elevation models for river floodplains A Klikunova, A Khoperskov	275-284
39. A technique for detecting diagnostic events in video channel of synchronous video and electroencephalographic monitoring data D Murashov, Yu Obukhov, I Kershner and M Sinkin	285-292
40. Possibility estimation of 3D scene reconstruction from multiple images E A Dmitriev, V V Myasnikov	293-296
41. Optimization of computational complexity of lossy compression algorithms for hyperspectral images L I Lebedev, A O Shakhlan	297-301
42. Multi-channel data storage format definition for visualization tasks on the example of SPOT-4 images N Yu Sevastianova, N S Vinogradova	302-308

43. Analysis and object markup of hyperspectral images for machine learning methods V P Gromov, L I Lebedev and V E Turlapov	309-317
44. Application of vision systems to improve the effectiveness of monitoring compliance with technical safety requirements at industrial facilities A A Ekimenko, E A Ekimenko and S V Shavetov	318-325
45. The regression model for the procedure of correction of photos damaged by backlighting A V Goncharova, I V Safonov and I A Romanov	326-333
46. Combined usage of the optical and radar remote sensing data in territory monitoring tasks V N Kopenkov	334-341
47. Surface recognition of machine parts based on the results of optical scanning M A Bolotov, V A Pechenin, N V Ruzanov and E J Kolchina	342-349
48. Improving the accuracy of detecting the edges of texture objects in remote sensing images E V Medvedeva, A I Evdokimova	350-357
49. Geometric modeling of raster images of documents with weakly formalized description of objects D Yu Vasin, V P Gromov and S I Rotkov	358-365
50. Watermarking algorithms for JPEG 2000 lossy compressed images V Fedoseev, T Androsova	366-370
51. Evaluation of different embedding methods for JPEG authentication watermarking A A Egorova, V A Fedoseev	371-379