

C O N T E N T S

R e v i e w s

Physics of nuclei and elementary particles

Obraztsov S.V., Kodolova O.L., Vardanyan I.N., Gavrilov V.B., Nikitenko A.N., Lychkovskaya N.V., Toms M.D. The operating principles of an algorithm for jet reconstruction using a calorimeter and trackers in collisions of high-energy particles ... 3

Optics and spectroscopy. Laser physics

Belinsky A.V. On the violation of causality in quantum experiments 14

R e g u l a r p a p e r s

Theoretical and mathematical physics

Nikolaev P.N. Phase transition in particle systems with a nonnegatively defined interaction potential 26

Bogolyubov A.N., Delitsyn A.L., Konyaev D.A., Khlebnikov F.B. Wave flow and the resonant decrease in the radiation visibility of extensive corrugated diffusers 32

Dubikovsky A.I., Silaev P.K. On the possibility of the implicit renormalization of the Casimir energy 41

Melnikova A.A., Derugina N.N. The dynamics of the autowave front in a model of urban ecosystems 48

Khalilov V.R. Quantum states of a neutral massive fermion with an anomalous magnetic moment in an external electric field 56

Physics of nuclei and elementary particles

Goncharov S.A., Sukhorukov R.V. An approximation for the density matrix in calculations of the mean-field potential of the interaction of nuclei 64

Optics and spectroscopy. Laser physics

Ruzhitskaya D.D., Ryzhikov S.B., Ryzhikova Yu.V. The optical properties of fractal nanodendrites in the processes of their self-organization 69

Condensed matter physics

Grigoriev F.V., Sulimov V.B., Tikhonravov A.V. A method of porosity analysis of deposited thin films: The results of a supercomputer simulation 74

Oreshko A.P., Ovchinnikova E.N., Kozlovskaia K.A., Dmitrienko V.E. On the calculation of an X-ray natural circular dichroism signal 79

Masyukov N.A., Dmitriev A.V. Hot electrons in $In_xGa_{1-x}N$ and $In_xAl_{1-x}N$ binary solid solutions 90

Pavlov S.V. Classification of the phenomenological models of phase transitions with two interacting order parameters using the catastrophe theory: $L = C_{2v}$ 94

Biophysics and medical physics

Avdyukhina V.M., Bliznyuk U.A., Borschegovskaya P.Yu., Buslenko A.V., Ilyushin A.S., Kondtatiieva E.G., Krusanov G.A., Levin I.S., Cinitcic A.P., Studenikin F.R., Chernyaev A.P. An investigation of the effects of X-ray treatment on the concentration of reducing sugars in potatoes and their sprouting 99

Belousov A.V., Belyanov A.A., Krusanov G.A., Chernyaev A.P. Simulation of ^{75}Se encapsulated sources for their potential use in brachytherapy 104