

## 5. PUBLICATIONS

### CONDENSED MATTER PHYSICS

#### Diffraction

1. Andrianov A.V., Kosarev D.I., Beskrovnyi A. I. Helical magnetic ordering in Tb completely suppressed by uniaxial tension: Evidence of electronic topological transition and support for the nesting hypothesis. Phys. Rev., 2000, v.B62, p.13844.
2. Babushkina N.A., Belova L.M., Taldenkov A.N., Aksenov V.L., Balagurov A.M., Pomjakushin V.Yu., Sheptyakov D.V., Gorbenko O.Yu., Kaul A.R., Kugel K.I., Khomskii D.I. Isotopically driven transitions in LaPrCaMnO system. Physica B, 2000, v.280, pp.323-324.
3. Balagurov A.M., Fischer P., Pomjakushin V.Yu., Sheptyakov D.V., Aksenov V.L. Atomic and magnetic structure of perovskite manganites: A-cation size and oxygen isotope substitution effects and homogeneity of magnetic state. Physica B, 2000, v.276-278, pp.536-539.
4. Balagurov A.M., Pomjakushin V.Yu., Sheptyakov D.V., Aksenov V.L., Fischer P., Keller L., Gorbenko O.Yu., Kaul A.R., Babushkina N.A. Long scale phase separation versus homogeneous magnetic state in  $(La_{1-y}Pr_y)_{0.7}Ca_{0.3}MnO_3$ : a neutron diffraction study. Physical Review B, 2000 (in press).
5. Balagurov A.M., Raspopina E.V., Sikolenko V.V., Lyubutin L.S., Stepin L.S., Gribanov A.V., Andre G., Bouree F., Duh H.M. Neutron diffraction study of the  $U(Pd_{1-x}Fe_x)_2Ge_2$  magnetic structure. J. of Magnetism and Magnetic Materials, 2000, v.210, pp.225-232.
6. Balagurov A.M., Fischer P., Pomjakushin V.Yu., Sheptyakov D.V., Aksenov V.L. Atomic and magnetic structure of perovskite manganites: A-cation size and oxygen isotope substitution effects and homogeneity of magnetic state. Physica B: Physics of Condensed Matter, 2000, v.276-278, pp.536-539.
7. Balagurov A.M., Pomjakushin V.Yu., Sheptyakov D.V., Aksenov V.L., Babushkina N.A., Belova L.M., Gorbenko O.Yu., Kaul A.R. A-cation size and oxygen isotope substitution effects on  $(La_{1-y}Pr_y)_{0.7}Ca_{0.3}MnO_3$  structure. Eur. Physical Journal, B, 2001, v.19, p.215.
8. Balagurov A.M., Beskrovnyi A.I., Mironova G.M., Pole A.V., Simkin V.G. "Diffraction experiments at the IBR-2 pulsed reactor with methane cold neutron source" JINR Communication, P3-2000-220, 2000, Dubna.
9. Balagurov A.M., Pomjakushin V.Yu., Sheptyakov D.V., Aksenov V.L., Fischer P., Keller L., Gorbenko O.Yu., Kaul A.R., Babushkina N.A. Long scale phase separation versus homogeneous magnetic state in  $(La_{1-y}Pr_y)_{0.7}Ca_{0.3}MnO_3$ : a neutron diffraction study. Phys. Rev. B, 2000, in press.
10. Bramnik K.G., Miehe G., Ehrenberg H., Fuess H., Abakumov A.M., Shpanchenko R.V., Pomjakushin V.Yu., Balagurov A.M. Preparation, structure and magnetic studies of a new  $Sr_{11}Re_4O_{24}$  double oxide. Solid State Chemistry, 2000, v.149, pp.49-55.
11. Chernyshov D.Yu., Sheptyakov D.V., Smirnov M.B., Trounov V.A. Crystal structure and lattice dynamic effects of rare-earth hexaborides under hydrostatic pressure. Physica B, 2000, v.276-278, pp.320-321.
12. Duginov V.N., Gritsaj K.I., Amato A., Baines Ch., Herlach D., Pomjakushin V.Yu., Zimmermann U., Ponomarev A.N., Krivosheev I.A., Nezhivoy A.A., Gribanov A.V., Nikiforov V.N., Seropegin Yu.D. Study of the magnetic properties of  $Ce_3Pd_{20}Si_6$  compound. Physica B, 2000, v.289-290, pp.43-46.
13. Fischer P., Frey G., Koch M., Koennecke M., Pomjakushin V., Schefer J., Thut R., Schlumpf N., Buerge R., Greuter U., Bondt S., Berruyer E. High-resolution powder diffractometer HRPT for thermal neutrons at SINQ. Physica B, 2000, v.276-278, pp.146-147.
14. Glazkov V.P., Savenko B.N., Somenkov V.A., Sheptyakov D.V., Shilstein S.Sh. Investigation of  $Nd_2CuO_4$  crystal structure at high pressure by neutron diffraction. High Pressure Research, 2000, v.17, pp.201-207.
15. Kozlenko D.P., Glazkov V.P., Savenko B.N., Somenkov V.A., Hull S. Structural study of  $ND_4Br$  at high pressure. High Pressure Research, 2000, v.17, pp.251-260.
16. Kozlenko D.P., Belushkin A.V., McGreevy R.L., Savenko B.N., Zetterström P. A study of orientational disorder in NaCl-type phase I of  $ND_4I$  by reverse Monte Carlo and maximum entropy methods. JINR Communication, 2000, E14-2000-221, Dubna.
17. Kozlenko D.P., Glazkov V.P., Savenko B.N., Somenkov V.A., Hull S. Structural study of  $ND_4I$  at high pressures and low temperatures. High Pressure Research, 2000, v.17, pp.235-249.
18. Kozlenko D.P., Savenko B.N., Glazkov V.P., Somenkov V.A., Hull S. Structure and dynamics of ammonium halides under high pressure. Physica B, 2000, v. 276-278, pp. 226-227.
19. Lobanov M.V., Balagurov A.M., Pomjakushin V.Ju., Fisher P., Gutmann M., Abakumov A.M., D'yachenko O.G., Antipov E.V., Lebedev O.I., Van Tendeloo G. Structural and magnetic properties of the colosal magnetoresistance perovskite  $La_{0.85}Ca_{0.15}MnO_3$ . Physical Review B, 2000, v.61, pp.8941-8949.
20. Pomjakushin V.Yu., Balagurov A.M., Raspopina E.V., Sikolenko V.V., Gribanov A.V., Schenck A., Amato A., Zimmermann U., Lyubutin I.S. Modulated structure of  $U(Pd_{1-x}Fe_x)_2Ge_2$  studied by  $\mu$ SR J.Phys.:Condens. Matter, 2000, v.12, pp.7969-7981.

21. Ponomarev A.N., Ivanter I.G., Krivosheev I.A., Nezhivoy A.A., Nikolsky B.A., Duginov V.N., Gritsaj K.I., Olshevsky V.G., Herlach D., Pomjakushin V.Yu., Zimmermann U. Magnetic field acting on muons in textured and single crystalline holmium. *Physica B*, 2000, v.289-290, pp.236-239.
22. Putilin S.N., Antipov E.V., Abakumov A.M., Rozova M.G., Lokshin K.A., Pavlov D.A., Balagurov A.M., Sheptyakov D.V., Marezio M. Effect of fluorination and high pressure on the structure and properties of the Hg-bearing superconducting Cu mixed oxides. *Physica C*, 2000, v.338, pp.52-59.
23. Raspopina E.V., Balagurov A.M., Pomjakushin V.Yu., Sikolenko V.V., Gribanov A.V., Amato A., Schenck A. Magnetic structure of  $U(Pd_{1-x}Fe_x)_2Ge_2$  studied by  $\mu$ SR: comparison with neutron diffraction data. *Physica B*, 2000, v.289-290, pp.282-285.
24. Schefer J., Boehm M., Keller L., Medarde M., Horisberger M., Fischer P., Pomjakushin V., Doenni A. Application of composite neutron germanium monochromators at SINQ: neutron powder diffraction (HRPT) and single crystal diffraction (TriCS). *Physica B*, 2000, v.276-278, pp.302-304.
25. Voronin V.I., Teplykh A.E., Medvedeva I.V., Kuchin A.G., Sheptyakov D.V., Glazkov V.P., Savenko B.N. Magnetic and structural properties of  $Y_2Fe_{15.3}Si_{1.7}$  alloy under high pressure. *High Pressure Research*, 2000, v.17, pp.193-200.

## Textures and stresses

1. Bestmann M., Kunze K., Matthews A. Evolution of a calcite marble shear zone complex on Thassos Island, Greece: Microstructural and textural fabrics and their kinematic significance. *Journal of Structural Geology*, 2000, v.22, pp.1789-1807.
2. Bokuchava G.D., Schreiber J., Shamsutdinov N., Stalder M. Residual stress studies in graded W/Cu materials by neutron diffraction method, *Physica B*, 2000, v.276-278, pp.884-885.
3. Burilichev D.E., Ivankina T.I., Klima K., Locajicek T., Nikitin A.N., Pros Z. Investigation of rock samples by neutron diffraction and ultrasonic sounding. *Physica B*, 2000, v.276-278, pp.837-838.
4. De Wall H., Bestmann M., Ullemeyer K. Anisotropy of diamagnetic susceptibility in Thassos marble: a comparison between measured and modelled data. *Journal of Structural Geology*, 2000, v.22, pp.1761-1771.
5. Frischbutter A., Neov D., Scheffzuek Ch., Vrana M., Walther K. Lattice strain measurements on sandstones under load using neutron diffraction. *Journal of Structural Geology*, 2000, v.22, pp.1587-1600.
6. Ivankina T.I., Nikitin A.N., Abramova V.I., Arkhipov I.K., Levin D.M.. Development of the model of texture formation in a plastically deformed iron-copper composite. *Zavodskaya laboratoria*, 2000, v.3, p.19-25.
7. Ivankina T.I., Nikitin A.N., Telepnev A.S., Ullemeyer K., Sobolev G.A., Sukhoparov V.A., Walther K. Textures and physical properties of marbles deformed at 20-250°C. *High Pressure Research*, 2000, v.17, pp.335-346.
8. Ivankina T.I., Yudin V.E.. Indexing of the diffraction spectra of multiphase materials. *Metodicheskie rekomendatsii*. 2000, Moscow, MSU, p. 14.
9. Leiss B., Weiss T. Fabric anisotropy and its influence on physical weathering of different types of Carrara marbles. *Journal of Structural Geology*, 2000, v.22, pp.1737-1745.
10. Locajicek T., Pros Z., Klima K., Nikitin A.N., Ivankina T.I., Ullemeyer K., Smirnov Y.P., Guberman D.M., Kouznetsov Y.I. P-wave elastic anisotropy and texture of amphibolites from the Kola super deep borehole KSDB-3. IGCP Project 408: The results of the study of the deep substance and physical processes in the Kola super deep borehole section down to a depth of 12261 m. Apatity: Poligraph, 2000, pp.122-125.
11. Nikitin A.N., Ullemeyer K., Ivankina T.I. Texture analysis of geologic materials by neutron diffraction. *JINR News*, 2000, v.3, pp.16-19.
12. Nikitin A.N.. The anisotropy and texture of materials. Course of lectures. *Uchebnoe posobie*. 2000, Moscow, MSU, 267 p.
13. Scheffzuek Ch., Walther K., Frischbutter A. Strain measurements on geomaterials by neutron time-of-flight diffraction. *Materials Science Forum*, 2000, v.347-349, pp.542-547.
14. Siegesmund S., Ullemeyer K., Weiss T., Tschegg E.K. Physical weathering of marbles caused by anisotropic thermal expansion. *International Journal of Earth Sciences*, 2000, v.89, pp.170-182.
15. Taran Yu.V., Schreiber J., Mikula P., Lukas P., Neov D., Vrana M. Neutron diffraction investigation of low and high cycle fatigue austenitic stainless steel. *Materials Science Forum*, 2000, v.347-349, pp.322-327.
16. Taran Yu.V., Schreiber J., Wright J.S. The time-of-flight diffraction measurements of residual stresses in a shape welded steel tube. *Materials Science Forum*, 2000, v.347-349, pp.640-645.
17. Ullemeyer K., Braun G., Dahms M., Kruhl J.H., Olesen N.-R., Siegesmund S. Texture analysis of a muscovite-bearing quartzite: a comparison of some currently used techniques. *Journal of Structural Geology*, 2000, v.22, pp.1541-1557.
18. Ullemeyer K., Spalthoff P., Leiss B., Weber K. TOF texture investigations of geological samples. *Physica B* 2000, v.276-278, pp.878-879.
19. Walther K., Scheffzuek C., Frischbutter A. Neutron time-of-flight diffractometer "EPSILON" for strain measurements: layout and first results. *Physica B*, 2000, v.276-278, pp.130-131.

## **Small angle scattering**

1. Avdeev M., Garamus V., Rosta L., Smirnova I., Smirnova N. SANS study of micelle formation in aqueous mixed solutions of sodium and magnesium dodecylsulfates. *Physica B*, 2000, v.276-278, pp.339-342.
2. Bakeeva R. F., Kudriavcev D. B., Zaharova L., Kudriavceva L.A., Rajewska A., Sopin V. F. Micellar liquid crystalline and polymer systems based on surfactant and polyethyleneimine as nanoreactors for transfer of phosphorous group. *Liquid Crystals*, 2000 (in press).
3. Cherezov V., Cheng A., Petit J.-M., Diat O., Caffrey M. Biophysics and synchrotron radiation. Where the marriage fails. X-ray damage of lipid membranes and mesophases. *Cellular and Molecular Biology*, 2000, v.46, pp.1133-1145.
4. Eckold G., Gorski N. Small-angle neutron scattering from tetradecyltrimethylammonium bromide in NaBr aqueous solutions. *Colloids and Surfaces A*, 2000(in press).
5. Merta J., Garamus V.M., Kuklin A.I., Willumeit R., Stenius P. Determination of the structure of complexes formed by a cationic polymer and mixed anionic surfactants by small-angle neutron scattering. *Langmuir*, 2000; v.16, pp.10061-10068
6. Sinko K., Cser L., Mezei R., Avdeev M., Peterlik H., Trimmel G., Schubert U., Fratzl P. Structure investigation of intelligent aerogels. *Physica B*, 2000, v.276-278, pp.392-393.
7. Uhrikova D., Balgavy P., Kucerka N., Islamov A., Gordeliy V. Kuklin A. Small-angle neutron scattering study of the n-decane effect on the bilayer thickness in extruded unilamellar dioleoylphosphatidylcholine liposomes. *Biophysical Chemistry*, 2000, v.88, pp.165-170.

## **Reflectometry, polarized neutrons**

1. Aksenov V.L., Cser L., Gundorin N.A., Nikitenko Yu.V., Popov Yu.P. Observation of neutron standing waves at total reflection of polarised neutrons by method of precision gamma-spectroscopy. *Physica B*, 2000, v.276-278, p.809.
2. Aksenov V.L., Gundorin N.A., Nikitenko Yu.V., Popov Yu.P., Cser L. Observation of neutron standing waves at total reflection of polarized neutrons by the method of precision gamma-spectroscopy. *Poverkhnost*, 2000, v.6, p.7.
3. Aksenov V.L., Kozhevnikov S.V., Nikitenko Yu.V. Refraction of polarized neutrons on boundaries of a magnetic film. *Physica B*, 2000, v.276-278, p.958.
4. Aksenov V.L., Kozhevnikov S.V., Nikitenko Yu.V. Spin-flipped transmission of polarized neutrons through a Co film on glass. *Physica B*, 2000, v.276-278, p.956.
5. Aksenov V.L., Kozhevnikov S.V., Nikitenko Yu.V., Lauter H. Reflection and refraction of spin-flip neutrons in a Fe-Gd structure. *Physica B*, 2000, v.276-278, p.179.
6. Aksenov V.L., Nikitenko Yu.V. Neutron interference in layered structure at grazing-incidence reflection. Neutron standing waves: application, status, perspectives. *Physica B*, 2001 (in press).
7. Aksenov V.L., Nikitenko Yu.V., Kozhevnikov S.V. Spin-flip spatial neutron beam-splitting in magnetic media. *Physica B*, 2001 (in press).
8. Aksenov V.L., Nikitenko Yu.V., Kozhevnikov S.V., Radu F., Krus R., Rekvedt T. Generation of neutron standing waves at total reflection of polarized neutrons. *Povekhnost*, 2000, v.8, p.10.
9. Aksenov V.L., Nikitenko Yu.V., Radu F., Gledenov Yu.M., Sedyshev P.V. Observation of resonance enhanced neutron standing waves through  $(n,\gamma)$  reaction, *Physica B*, 2000, v.276-278, p.916.
10. Gutberlet T., Kiselev M., Heerklotz H., Klose G. SANS study of mixed POPC/C<sub>12</sub>E<sub>n</sub> aggregates. *Physica B*, 2000, v.381-383, pp.276-278.
11. Kiselev M.A., Grysunov Yu.A., Dobretsov G.E., Komarova M.N. The size of the human albumin molecule in solutions. *Biofizika*, 2001 (in print).
12. Kiselev M.A., Lesieur P., Kisilev A.M., Lombardo D., Killany M., Lesieur S. Sucrose buffer as perspective medium to study the vesicle structure: SAXS and SANS study. *J. Alloys and Compounds*, 2001 (in press).
13. Kiselev M.A., Lesieur P., Kisilev A.M., Lombardo D., Killany M., Lesieur S., Ollivon M. A sucrose solutions application to the study of model biological membranes. *Nuclr. Inst&Method*, 2001 (in press).
14. Kiselev M.A., Lesieur P., Kisilev A.M., Ollivon M. Ice formation in model biological membranes in the presence of cryoprotectors. *Nuclr. Inst&Method A*, 2000, v.448, pp.255-260.
15. Kiselev M.A., Lesieur P., Lombardo D., Kisilev A.M., Gutberlet T. The investigation of temperature-sensitive phospholipid /surfactant systems via neutron and X-ray small-angle scattering and diffraction. *Chemistry and Physics of Lipids*, 2000, v.107, p.72.
16. Kiselev M.A., Lesieur P., Lombardo D., Kisilev A.M., Ollivon M. A structure of phospholipid vesicles in the presence of cryoprotectors. *Chemistry and Physics of Lipids*, 2000, v.107, pp.72-73.
17. Korneev D.A., Bodnarchuk V.I., Peresedov V.F., Zhuravlev V.V., Schebetov A.F. Inelastic mode of polarised reflectometer REFLEX-P for observation of surface phonons and magnons. *Physica B*, 2000, v.276-278, pp.314-315.

18. Korneev D.A., Bodnarchuk V.I., Yaradaikin S.P., Peresedov V.F., Ignatovich V.K., Menelle A., Gaehler R. Reflectometry studies of the coherent properties of neutrons. *Physica B*, 2000, v.276-278, pp.973-974.
19. Kravtsov E., Lauter-Pasyuk V., Lauter H.J., Toperverg B., Nikonov O., Petrenko A., Milyaev M.A., Romashev L., Ustinov E. Interface formation and magnetic ordering in Fe/Cr hybrid nanostructures. *Physica B*, 2000 (in press).
20. Lauter-Pasyuk V., Lauter H.J., Lorenz M., Petrenko A., Nikonov O., Aksenov V.L., Leiderer P. Magnetic field distribution around flux-lines in  $\text{YBa}_2\text{Cu}_3\text{O}_7$  superconducting thin films in a parallel field. *Physica B*, 2000, v.276-278, p.776-777.
21. Lauter-Pasyuk V., Lauter H.J., Toperverg B., Nikonov O., Kravtsov E., Milyaev M.A., Romashev L., Ustinov V. Magnetic off-specular neutron scattering from Fe/Cr multilayers. *Physica B*, 2000, v.283, pp.194-198.
22. Lesieur P., Kiselev M.A., Barsukov L.I., Lombardo D. Temperature induced micelle to vesicle transition: kinetic effects in the DMPC / NaC system. *J. Appl. Cryst.*, 2000, v.33, pp.623-627.
23. Nikitenko Yu.V., Kozhevnikov S.V., Toperverg B., Nikonov O., Lauter-Pasyuk V., Lauter H. Towards 3D polarization analysis in neutron reflectometry. *Physica B*, 2000 (in press).
24. Schmiedel H., Joerchel P., Kiselev M., Klose G. Determination of structural parameters and hydration of unilamellar POPC/C<sub>12</sub>E<sub>4</sub>-vesicles at high water excess from neutron scattering curves using a novel method of evaluation. *J. Phys. Chem.*, 2001 (in press).
25. Toperverg B., Lauter-Pasyuk V., Lauter H., Nikonov O., Ausserri D., Gallot Y. Morphology of off-specular neutron scattering pattern from islands on a lamellar film. *Physica B*, 2000, v.283, pp.60-64.

## Inelastic scattering of neutrons

1. Baran J., Pawlukojc A., Majerz I., Malarski Z., Sobczyk L., Grech E. Vibrational spectra of the adduct of 1,8-bis(dimethylamino) naphthalene with dichloromaleic acid (DMAN\*DCM). *Spectrochimica Acta A*, 2000, v.56, pp.1801-1812.
2. Bobrowicz-Sarga L., Czarnecki P., Lewicki S., Natkaniec I., Wasicki J. Neutron diffraction study of thermal expansion and compressibility of piridinium nitrate and tetrafluoroborate. *Materials Science Forum*, 2000, v.321-324, pp.1107-1112.
3. Cser L., Hoidera-Natkaniec K., Natkaniec I., Pawlukojc A. Neutron spectroscopy and QC modeling of the low-frequency internal vibrations of mesitylene. *Physica B*, 2000, v.276-278, pp.296-297.
4. Glazkov V.P., Kozlenko D.P., Savenko B.N., Somenkov V.A. Vibrational spectra of ammonia halides NH<sub>4</sub>I and NH<sub>4</sub>F at high pressures. *JETP*, 2000, v.90, pp.319-323.
5. Glazkov V.P., Somenkov V.A., Syrykh G.F., Savenko B.N. Splitting of libration mode frequencies in the vicinity of orientation phase transition in NH<sub>4</sub>Br. *High Pressure Research*, 2000, v.17, pp.289-295.
6. Hoidera-Natkaniec K., Natkaniec I., Pawlukojc A., Khavryuchenko V.D. Neutron spectroscopy and QC modeling of methyl dynamics in 1- and 2-methyl-naphthalene crystals, *Physica B*, 2000, v.276-278, pp.292-293.
7. Kazimirov V.Yu., Rieder E.E., Sarin V.A., Smirnov M.B., Belushkin A.V., Shuvalov L.A. Investigation of ferroelectric phase transition in DMAAS crystals: neutron diffraction, neutron spectroscopy, theoretical model. *Ferroelectrics*, 2000, v.235, pp.35-46.
8. Lushnikov S.G., Belushkin A. V., Gvasaliya S.N., Natkaniec I., Shuvalov L.A., Smirnov L.S., Dolbinina V.V. Neutron scattering study of the Cs<sub>5</sub>H<sub>3</sub>(SO<sub>4</sub>)<sub>4</sub>\*0.5H<sub>2</sub>O crystal and its deuterated analog. *Physica B*, 2000, v.276-278, pp.483-484.
9. Lushnikov S.G., Gvasalia S.N., Siny I.G., Sashin I.L., Schmidt V.N., Uesu Y. Temperature dependence of the generalized vibrational density of states of sodium bismuth titanate in the ferroelectric phase. *Solid State Communications*, 2000, v.116, pp.41-45.
10. Majerz I., Pawlukojc A., Sobczyk L., Dziembowska T., Grech E., Szady-Cheimieniecka A. The infrared, Raman and inelastic neutron scattering studies on 5-nitro-N-salicylideneethylamine. *Journal of Molecular Structure*, 2000, v.552, pp.243-247.
11. Malenkov G.G., Averkiev A.A., Bobrowicz-Sarga L., Bragin S.I., Natkaniec I., Smirnov L.S. Neutron scattering study of heavy water and ice under hydrostatic Ar pressure. *Materials Science Forum*, 2000, v.321-324, pp. 872-877.
12. Malenkov G.G., Zheligovskaya E.A., Averkiev A.A., Natkaniec I., Smirnov L.S., Bobrowicz -Sarga L., Bragin S.I. Dynamics of hydrogen-bonded water networks under high pressure: neutron scattering and computer simulation, *High Pressure Research*, 2000, v.17, pp.273-280.
13. Mikuli E., Migdai-Mikuli A., Natkaniec I., Mayer J. Phase transition and water dynamics of [Mn(H<sub>2</sub>O)<sub>6</sub>](ClO<sub>4</sub>)<sub>2</sub> studied by differential scanning calorimetry and neutron scattering methods. *Z. Naturforsch.*, 2000, v.55a, pp.1-6.
14. Natkaniec I., Martinez Sarzion M.L., Mestres L., Smirnov L.S. Ammonium dynamics and structural phase transition in Rb<sub>1-x</sub>(NH<sub>4</sub>)<sub>x</sub>I solid solutions at 20K. *Physica B*, 2000, v.276-278, pp.294-295.
15. Osborn R., Goremychkin E.A., Sashin I.L., Murani A.P. Anomalous magnetic response of Ce<sub>1-x</sub>La<sub>x</sub>Al<sub>3</sub>. *Journal of Appl. Physics*, 2000, v.87, pp.5131.

16. Pawlukojc A., Natkaniec I., Malarski Z., Leciejewicz J. The dynamical pattern of the 2-aminopyrazine-3-carboxylic acid molecule by inelastic and incoherent neutron scattering, Raman spectroscopy and ab initio calculations. *Journal of Molecular Structure*, 2000, v.516, pp.7-14.
17. Sheka E., Barthel H., Khavryutchenko V., Natkaniec I., Nikitina E., Weis J. INS and IR studies of intermolecular interaction at the silicone-fumed silica interface I. *Silicones, Phys. Low-Dim. Struct.*, 2000, v.7-8, pp.127-158.
18. Sheka E., Natkaniec I., Khavryutchenko V., Nikitina E., Barthel H., Weis J. INS study of intermolecular interaction at the silicone-fumed silica interface. *Physica B*, 2000, v.276-278, pp.244-246.
19. Shuvalov L.A., Natkaniec I., Smirnov L.S. Dynamic and static orientational disorder in mixed  $K_{1-x}(NH_4)_xI$  crystals. *Crystallography Reports*, 2000, v.45, pp.270-276.
20. Wasicki J., Kozlenko D.P., Lewicki S., Goc R., Savenko B.N. Ammonium ions dynamics in  $NH_4Br$  at high pressure - measurements and simulations. *High Pressure Research*, 2000, v.18, pp.359-363.

### **Accelerated ions and OSR**

1. Didyk A.Yu., Kobzev A.P., Orelovich O.L., Semina V.K. Track effects in silicon irradiated by swift high energy heavy ions. *JINR Communication E14-2000-107*, 2000, Dubna, JINR.
2. Pogrebnjak A.D., Kobzev A.P., Gritsenko B.P., Sokolov S., Bazyl E., Sviridenko N.V., Valyaev A., Ivanov Yu. F. Effect of Fe and Zr ion implantation and high-current electron irradiation treatment on chemical and mechanical properties of Ti-V-Al alloy. *Journal of Applied Physics*, 2000, v.87, pp. 2142-2148.
3. Popov Yu.P., Voinov A.V., Parzhitski S.S., Gundorin N.A., Serov D.G., Kobzev A.P., Sedyshev P.V. Measurements of a partial cross section for the reaction  $^{58}Ni(n,\gamma)$   $^{59}Ni$ . *Physics of Atomic Nuclei*. v.63, 2000, pp. 525-529.

### **Miscellaneous**

1. Aksenov V.L., Ossipyan Yu.A., Forro L., Khasanov S., Chernyshev V.V., Shakhmatov V.S. Fullerene molecule strain in  $RbC_{60}$ . *Physics Letters A*, 2000, v.268, pp.395-398.
2. Aksenov V.L., Ossipyan Yu.A., Shakhmatov V.S. Symmetry groups of carbon nanotubes. *Particles and Nuclei, Letters*, 2000, v.1, pp.44-47.

### **Participation in conferences**

1. Avdeev M.V., Balasoiu M., Bica D., Rosta L., Torok G., Vekas L. Influence of particle concentration on ferrofluids microstructure studied by SANS. 8th European Magnetic Materials and Applications Conference, June 7-10, 2000, Kyiv, Ukraine.
2. Aksenov V.L., Ossipyan Yu.A., Shakhmatov V.S. Symmetry groups of carbon nanotubes. International Symposium on Fullerenes and Fullerene- Like Structures in Condensed Matter, 6-8 June, 2000, Minsk, Belarusia.
3. Aksenov V.L., Shakhmatov V.S. Phase transitions in fullerene crystals. XXVIII International Winter School of Physicist. Courkovka-2000, February 28 - March 4, 2000, Ekaterinburg, Russia.
4. Balagurov A.M. Atomic and magnetic structure of  $(La_{1-y}Pr_y)_{0.7}Ca_{0.3}MnO_3$ : A-cation size and oxygen isotope substitution effects and homogeneity of magnetic state. M2S-HTSC-VI, 2000, February 20-25, Houston, USA.
5. Balagurov A.M. Magnetic and structural macroscopic phase separation in the perovskite manganites: A-cation size and isotope effects. ISRF-III, 2000, June 14-17, Dubna, Russia.
6. Balagurov A.M. Magnetic and structural macroscopic phase separation in the perovskite manganites: A-cation size and isotope effects. ISRF-III, 2000, June 14-17, Dubna, Russia.
7. Balagurov A., Pomjakushin V., Sheptyakov D., Fischer P. Structural long-range phase separation in perovskite manganites. ECM-XIX, 2000, August 25 – 31, Nancy, France.
8. Balagurov A.M. Magnetic and structural macroscopic phase separation in the perovskite manganites: A-cation size and isotope effects. ASR-2000, 2000, October 31 - November 02, Tokai, Japan.
9. Balagurov A.M. New developments of TOF neutron diffraction at the IBR-2 pulsed reactor. ICANS-XV, 2000, November 06-09, Tsukuba, Japan.
10. Baran J., Pawlukojc A., Majerz I., Malarski Z., Sobczyk L., Grech E. Vibrational spectra of the adduct of 1,8-bis(dimethylamino)naphthalene with dichloromaleic acid (DMAN\*DCM). EUCMOS XXV, August 27-September 1, 2000, Coimbra, Portugal.
11. Brokmeier H.-G., Jansen E.M., Spalthoff P., Signorelli J.A., Turner, Bolmaro R.E. Magnesium SiC reinforced composites - texture and residual strain investigation by simulation and experiments. Int. Congr. ‘Magnesium Alloys and their Applications’, September 26-28, 2000, Munich, Germany.
12. Brokmeier H.-G., Jansen E.M., Spalthoff P., Signorelli J.A., Turner G., Bolmaro R.E. Texture and residual strains of ceramic reinforced magnesium composites. Experiments and Simulations. THERMEC-2000, December 4- 8, 2000, Las Vegas, USA.

13. Brokmeier H.-G., Jansen E.M., Spalthoff P., Signorelli J.A., Turner G., Bolmaro R.E. Magnesium SiC reinforced composites - texture and residual strain investigation by simulation and experiments. Int. Congr. 'Magnesium Alloys and their Applications'. September 26-28, 2000, Munich, Germany.
14. Brokmeier H.-G., Jansen E.M., Spalthoff P., Signorelli J.A., Turner G., Bolmaro R.E. Texture and residual strains of ceramic reinforced magnesium composites. Experiments and Simulations. THERMEC-2000, December 4-8, 2000, Las Vegas, USA.
15. Budzynski P., Tarkowski P., Jartych E., Kobzev A.P. Evolution of mechanical properties in tool steel implanted with high energy nitrogen ions. III International Symposium "Ion Implantation and Other Application of Ions and Electrons", June 12-15, 2000, Dolny, Poland.
16. Dlouha M., Natkaniec I., Rubin J., Smirnov L.S., Vratislav S. Structural and magnetic phase transitions in  $(\text{NH}_4)_x\text{Rb}_{1-x}\text{MnF}_3$  perovskites ( $0.75 < x < 1$ ). EPDIC-7, May 20-23, 2000, Barcelona, Spain.
17. Fedotov W.K., Antonov W.E., Bashkin I.O., Natkaniec I., Hansen T., Hasanov S.S. Neutron investigation of new high pressure phase of  $\text{SeH}_2$ . PTHP, June 13-17, 2000, Chernogolovka, Russia.
18. Fedotov W.K., Antonov W.E., Ivanov A., Kolesnikov A.I., Sashin I.L., Hansen T. Crystallographic structure and lattice vibration of high pressure phases of Co-H system. PTHP, June 13-17, 2000, Chernogolovka, Russia.
19. Fedotov W.K., Antonov W.E., Kolesnikov A.I., Natkaniec I., Sashin I.L. Structure, lattice dynamics and giant tunneling effect in 6-Mn. PTHP, June 13-17, 2000, Chernogolovka, Russia.
20. Frischbutter A., Scheffzuek C., Walther K. Last- und Restspannungszustaende in Quarz und Dolomit - bestimmt mittels Neutronendiffraktion. 8<sup>th</sup> symposium on 'Tectonics, Structural and Crystalline Geology', October 4-6, 2000, Freiburg, Germany.
21. Groeger H., Leiss B., Ullemeyer K., Lebit H. Quantitative texture analyses of deformed amphibolites and biotite schists. 8<sup>th</sup> symposium on 'Tectonics, Structural and Crystalline Geology', October 4-6, 2000, Freiburg, Germany.
22. Hewat A., Martinez Sarrion M.L., Mestres L., Natkaniec I., Smirnov L.S., Shuvalov L.A. Diffraction study of x-T phase diagram of the  $(\text{NH}_4)_x\text{Rb}_{2-x}\text{SO}_4$  mixed crystals. EPDIC-7, May 20-23, 2000, Barcelona, Spain.
23. Hoiderna-Natkaniec K., Kiodzicski P., Natkaniec I., Pawlkojch A., Szczewski A. Neutron scattering investigations of vibrational spectra of testosterone and progesterone. XII PCMC, September 20-23, 2000, Krakow, Poland.
24. Ivankina T.I. Neutron diffraction investigations of local strains and microstresses in rocks. International conference "Physical properties of rocks at high pressure" dedicated to the 100<sup>th</sup> anniversary of M.P.Volarovich, 4-5 October 2000, Moscow.
25. Ivankina T.I., Nikitin A.N., Locajicek T., Pros Z., Klima K., Burilichev D.E. Texture and P-wave anisotropy of olivine xenoliths determined by neutron diffraction and ultrasonic sounding. XVII General Assembly of the European Seismological Commision, September 10-15, 2000, Lisbon, Portugal.
26. Ivankina T.I., Nikitin A.N., Sobolev G.A., Scheffzuek Ch., Frischbutter A. Intracrystalline strain of calcite measured with neutron diffraction under temperature and uniaxial load. XVII General Assembly of the European Seismological Commision, September 10-15, 2000, Lisbon, Portugal.
27. Kazansky V.I., Lobanov K.V., Zharkov A.V., Nikitin A.N., Ivankina T.I. Investigation of the rocks-analogues from the Kola Superdeep borehole and surface based on geological and neutron methods. Plenary Meeting of IGSP Project 408, September 24-28, 2000, Prague, Czech Republic.
28. Kiselev M.A., Kisilev A.M., Lombardo D., Lesieur P. DMPC membrane swelling by nonionic surfactant  $\text{C}_{12}\text{E}_8$ : X-ray small-angle diffraction study. 5<sup>th</sup> International School and Symposium on Synchrotron Radiation in Natural Science, June 12-17, 2000, Ustron Jaszowiec, Poland.
29. Kiselev M.A., Lesieur P., Kisilev A.M., Lombardo D., Killany M., Lesieur S. Sucrose buffer as perspective medium to study the vesicle structure: SAXS and SANS study. 5<sup>th</sup> International School and Symposium on Synchrotron Radiation in Natural Science. June 12-17, 2000, Ustron Jaszowiec, Poland.
30. Kiselev M.A., Lesieur P., Kisilev A.M., Lombardo D., Killany M., Lesieur S., Ollivon M.A sucrose solutions applicatiion to the study of model biological membranes. XIII Russian Conference on Application of Synchrotron Radiation, July 17-21, 2000, Novosibirsk, Russia.
31. Kiselev M.A., Lesieur P., Lombardo D., Kisilev A.M., Ollivon M. A structure of phospholipid vesicles in the presence of cryoprotectors. 41<sup>st</sup> International Conference on the Biochemistry of Lipids, September 13-16, 2000, Halle, Germany.
32. Kiselev M.A., Lesieur P., Lombardo D., Kisilev A.M., Gutberlet T. The investigation of temperature-sensitive phospholipid /surfactant systems via neutron and X-ray small-angle scattering and diffraction. 41<sup>st</sup> International Conference on the Biochemistry of Lipids. September 13-16, 2000, Halle, Germany.
33. Kobzev A.P., Kravtcov E.A., Romashev L.N., Semerikov A.V., Ustinov V.V. Using of the high-grade layered structure for the deminstration of the depth resolution of the RBS method. III International Symposium "Ion implantation and other application of ions and electrons", June 12-15, 2000, Kazimierz Dolny, Poland.
34. Kozlenko D.P., Savenko B.N., Glazkov V.P., Somenkov V.A., Hull S. Structural study of ammonium halides  $\text{ND}_4\text{I}$  and  $\text{ND}_4\text{Br}$  at high pressure and low temperature. International Workshop on "Crystallography at high pressure and high temperature using X-rays and neutrons". September 30 –October 3, 2000, Spring-8, Japan.
35. Kozlenko D.P., Savenko B.N., Glazkov V.P., Somenkov V.A., Hull S. Neutron diffraction study of  $\text{ND}_4\text{I}$  and  $\text{ND}_4\text{Br}$  at high pressure and low temperature. 19th European Crystallographic Meeting, 25-31 August 2000, Nancy, France.

36. Lauter-Pasyuk V., Lauter H.J., Toperverg B., Nikonorov O., Kravtsov E., Milyaev M.A., Romashov L., Ustinov V. Magnetic neutron off-specular scattering for the direct determination of the coupling angle in exchange couple multilayers. International conference on Magnetism, August 6-11, 2000, Recife, Brasil.
37. Locajicek T., Pros Z., Klima K., Nikitin A.N., Ivankina T.I., Ullemeyer K., Smirnov Yu.P., Kuznetsov Yu.I. P-wave elastic anisotropy and texture of amphibolites from the Kola Superdeep borehole KSDB-3. Plenary Meeting of IGSP Project 408, September 24-28, 2000, Prague, Czech Republic.
38. Martinez Sarrion M.L., Mestres L., Natkaniec I., Pawlukovic A., Smirnov L.S. The participation of the  $\text{NH}_4^+$  ion in ferroelectric phases of AA'BX<sub>4</sub> type compounds. EPDIC-7, May 20-23, 2000, Barcelona, Spain.
39. Martinez-Sarrion M.L., Mesters L., Herraiz M., Balagurov A.M., Beskrovnyi A.I., Smirnov L.S., Vasilevskii S.G.  $\text{Bi}_{2.5+x}\text{Li}_{0.5-x}\text{Nb}_2\text{O}_9$  ( $x=0.04$ ) – new compound with Aurivillius type structure. X-ray and neutron powder diffraction study. EPDC-7, May 20-23, 2000, Barcelona, Spain.
40. Natkaniec I. Neutron scattering investigation at the IBR-2 reactor at 2000 and perspectives for the following year. PSNS-IV, September 24-26, 2000, Krakow, Poland.
41. Natkaniec I., Dianoux A.-J., Martinez Sarrion M.L., Mestres L., Smirnov L.S., Shuvalov L.A. The peculiarities of ammonium dynamics in the  $\text{Rb}_{1-x}(\text{NH}_4)_x\text{I}$  mixed crystals. ISRF-III, June 14-17, 2000, Dubna, Russia.
42. Natkaniec I., Dianoux A.-J., Martinez Sarrion M.L., Mestres L., Smirnov L.S., Shuvalov L.A. Transition from quantum tunneling to orientational glass and ordered crystal dynamics of ammonium in  $\text{Rb}_{1-x}(\text{NH}_4)_x\text{I}$  mixed salts. VIII F-PSDTMM, September 13-17, 2000, Choch Castle, Poland.
43. Natkaniec I., Hoiderna-Natkaniec K., Kalus J. Neutron Spectroscopy and Computing Simulations of Lattice Dynamics and Internal Vibrations of Differently Deuterated p-Xylene. VIII F-PSDTMM, September 13-17, 2000, Choch Castle, Poland.
44. Natkaniec I., Hoiderna-Natkaniec K., Parlicki K. Dynamics of crystalline and vitreous methanol, XII PCMC, September 20-23, 2000, Krakow, Poland.
45. Natkaniec I., Hoiderna-Natkaniec K., Parlicki K. Neutron scattering investigations and computational modeling of dynamics of urea:  $\text{CO}(\text{NH}_2)_2$  and  $\text{CO}(\text{ND}_2)_2$ . 4<sup>th</sup> PSNS September 24-26, 2000, Krakow, Poland.
46. Natkaniec I., Hoiderna-Natkaniec K., Parlicki K. Lattice and internal dynamics of crystalline and glassy methanol: H - D isotope effects. ISNSICM-7, May 11-13, 2000, Poznan, Poland.
47. Natkaniec I., Smirnov L.C., Telepiniev A.S., Sukhoparov W.A., Bragin S.I. Neutron studies of D<sub>2</sub>O in the area of meta-stability of ice-IV phase. PTHP, June 13-17, 2000, Chernogolovka, Russia.
48. Natkaniec I., Smirnov L.C., Telepiniev A.S., Sukhoparov W.A., Bragin S.I., Kobelev G.W. In situ neutron investigation of heavy water phases at high pressure range up to 5 kbar. PTHP, June 13-17, 2000, Chernogolovka, Russia.
49. Nikitenko Yu.V. Neutron spin precession for structural investigations of layered structure. International Workshop on neutron spin-echo spectroscopy, October 16-17, 2000, HMI, Berlin, Germany.
50. Nikitin A.N. Neutron diffraction investigations of the texture and anisotropy of rocks at elevated temperatures and pressures. International conference "Physical properties of rocks at high pressure" dedicated to the 100<sup>th</sup> anniversary of M.P. Volarovitch, 4-5 October 2000, Moscow.
51. Nikitin A.N., Ivankina T.I. Texture measurements of geological materials: a study by neutron diffraction. Plenary Meeting of IGSP Project 408. September 24-28, 2000, Prague, Czech Republic.
52. Pawlukovic A., Leciejewicz J., Parker S.F., Tomkinson J. Neutron spectroscopy and ab initio study of hydrogen bonds dynamics in L-serine and L-threonine. EUCMOS XXV, August 27-September 1, 2000, Coimbra, Portugal.
53. Pomjakushin V.Yu., Balagurov A.M., Zakharov A.A. Concomitance of magnetic ordering and superconductivity in low oxygen mobility  $\text{La}_2\text{CuO}_{4+x}$  single crystals. 6th International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors, February 20-25, 2000, Houston, USA.
54. Popov Yu.P., Voinov A.V., Parzhitski S.S., Kobzev A.P., Gundorin N.A., Serov D.G., Sedyshev P.V., Sedysheva M.V. Analysis of the partial radiative neutron capture cross section by <sup>58</sup>Ni nuclei. ISSIN-8. May 17-20, 2000 Dubna, Russia.
55. Reehuis M., Smirnov L.S., Sarin V.A., Georgiev D.G., Natkaniec I., Baranov A.I., Dolbinina V.V., Shuvalov L.A. Ammonium dynamics in crystal structure of phase II of  $(\text{NH}_4)_3\text{H}(\text{SO}_4)_2$ . NCC-II, May 22-26, 2000, Chernogolovka, Russia.
56. Scheffzuek, Ch., Walther, K., Frischbutter, A., Zhukov, R.A. Strain/stress measurements on dolomite rocks using neutron TOF diffraction and the determination of its orientation functions. Stress Evaluation Meca-SENS by Neutron and Synchrotron Radiation, December 13-14, 2000, Reims, France.
57. Shchennikov V.V., Berger I.F., Glazkov V.P., Kozlenko D.P., Tikhomirov S.V., Voronin V.I. Neutron Diffraction Investigation of Pressure – Induced Phase Transition in Ternary Mercury Compounds. International Workshop on "Crystallography at High Pressure and High Temperature using X-rays and Neutrons", September 30 – October 3 2000, Japan.
58. Ullemeyer K., Siegesmund S., Rasolofosaon P.N.J. Elastic Properties of Rocks from the TRANSALP Seismic Traverse. 8<sup>th</sup> symposium on 'Tectonics, Structural and Crystalline Geology', October 4-6, 2000, Freiburg, Germany.

## NEUTRON NUCLEAR PHYSICS

## Reviews

1. Alexandrov Yu. A., Furman W.I., Ignatyuk A.V., Kazarnovsky M.V., Konovalov V.Yu., Kornilov N.V., Pikelner L.B., Plyaskin V.I., Popov Yu.P., Rauch H., Waschkowski W., Zamyatnin Yu.S. Landolt-Bornstein Numerical Data and Functional Relationships in Science and Technology, Group 1: Elementary Particles, Nuclei and Atoms, Volume 16: Low Energy Neutron Physics, Subvolume A: Low Energy Neutrons and Their Interaction with Nuclei and Matter, Part 1.— Springer-Verlag, Berlin Heidelberg, 2000

## Experimental research

1. Alfimenkov V.P., Gagarsky A.M., Golosovskaya S.P. et al. Parity violation and interference effects in the angular distributions of fission fragments from the resonance neutron induced fission of  $^{233}\text{U}$ , *Jad. Fiz.*, 2000, v.63, p.598.
2. Baek W.Y., Kim G.N., Cho M.H., Ko I.S., Namkung W., Grigoriev Yu.V., Faikov-Stanczyk H., Shvetsov V.N., Furman W.I. Investigation of  $\gamma$ -multiplicity spectra and neutron capture cross-sections of  $^{232}\text{Th}$  in the energy region 21.5–215 eV. *Nuclear Instruments and Methods in Physics Research B* **168** (2000) 453–461
3. Bondarenko I.V., Frank A.I., Balashov S.N., Masalovich S.V., Nosov V.G., Geltenbort P., Cimmino A., Klein A.G. *UCN gravity spectrometry using neutron interference filter*. *NIM A*, 440 (2000), pp. 591–596, 2000.
4. Bondarenko V.A., Khitrov V.A., Sukhovojs A.M., Honzatko J., Tomandl I., Cascade gamma-decay of the  $^{191}\text{Os}$  compound nucleus, *JINR preprint E3-99-343*, Dubna, 1999.
5. Boneva S.T., Vasilieva E.V., Sukhovojs A.M., Khitrov V.A., Cascade  $\gamma$ -decay of the  $^{190}\text{Os}$  compound nucleus. *Izv. RAN, ser. fiz.*, 64(3) (2000) 593–599
6. Boneva S.T., Vasilieva E.V., Sukhovojs A.M., Khitrov V.A., Two-step  $\gamma$ -cascades following thermal neutron capture in  $^{187}\text{Os}$ . *Izv. RAN, ser. fiz.*, 64(3) (2000) 585–592
7. Boneva S.T., Vasilieva E.V., Sukhovojs A.M., Khitrov V.A., Two-step  $\gamma$ -cascades after the thermal neutron capture in  $^{139}\text{La}$ . *Izv. RAN, ser. fiz.*, 64(5) (2000) 942–949
8. Borzakov S.B., Andreev A.N., Dermendjiev E., Filip A., Furman W.I., Panteleev Ts., Ruskov I., Zamyatnin Yu.S., Zeinalov Sh., Measurements of Delayed Neutron Yields from Thermal-Neutron-Induced Fission of  $^{235}\text{U}$ ,  $^{233}\text{U}$ ,  $^{239}\text{Pu}$  and  $^{237}\text{Np}$ . // *ЯФ*.— 2000.— т.63, N4.— с.589–597.
9. Borzakov S.B., Panteleev Ts., Pavlov S.S., Ruskov I.N., Zamyatnin Yu.S. Study of Delayed Neutron Decay Curves From Thermal Neutron Induced Fission of  $^{235}\text{U}$  and  $^{239}\text{Pu}$ . // *Progress in Nuclear Energy*, to be published
10. Borzakov S.B., Zamyatnin Yu.S., Panteleev Ts., Pavlov S.S., Ruskov I. Investigation of delay neutron decay curves at thermal neutron induced fission // *VANT*, Series: *Jad. Konstanty*, 1999, issue 2, p. 5–11
11. Bunatian G.G. et al, *Zeit.Phys.*A359, p.337, 1997
12. Enik T.L., Kharjuzov R.V., Mitsyna L.V., Samosvat G.S. The UGRA Spectrometer for the Measurement of the Neutron Electric Polarizability. *Nucl. Instr. Meth.*, 2000, v.**A440**, p.777.
13. Enik T.L., Mitsyna L.V., Samosvat G.S., Sinitza V.V. Investigation of Interference Minima Near s-Wave Resonances of  $^{238}\text{U}$ . *ISINN-8. Abstracts*, E3-2000-71, Dubna, 2000, p.103.
14. Faikov-Stanczyk H., Grigoriev Yu. V., Kitaev V. Ya., Panteleev Ts. Ts. «*Study of a resonance self-shielding effect in the  $\alpha$ -value of  $^{235}\text{U}$ ,  $^{239}\text{Pu}$  in the neutron resonance energy range*», ANNUAL REPORT 2000, Obninsk, ed. by Kuzminov B.D.
15. Frank A.I., Gaehler R. *Time focusing of neutrons*. *Jad.Fiz.*, 2000, v.63,p.605-608.
16. Georgiev G.P., Zamyatnin Yu.S., Pikelner L.B., Faikow-Stanczyk H., Grigoriev Yu.V., Muradyan G.V., Janeva N.B. Determination of the parameters of  $^{149}\text{Sm}$  neutron resonances in the energy range 15 – 300 eV. *VANT*, Series: *Jad. Konstanty*, 1999, issue. 1, 1999, p. 3.
17. Gledenov Yu.M., Koehler P.E., Andrzejewski J., Guber K., Rausher T..  $^{147}\text{Sm}(n,\alpha)$  cross section measurements from 3 eV to 500 keV: Implications for explosive nucleosynthesis reaction rates. *Phys. Rev. C***62** (2000) 042801.
18. Gledenov Yu.M., Sedysheva M.V., Khuukhenkhuu G., Guohui Zhang, Guoyou Tang, Jinxiang Chen, Xuemei Zhang, Zemin Chen, Yingtang Chen. Twin ionization chamber for studies of (n,p), (n, $\alpha$ ) reactions. *JINR Communications* E13-2000-89 (Dubna, 2000) 1-8.
19. Grigoriev E. P., V. A. Khitrov, A. M. Sukhovojs and E. V. Vasilieva A search for the  $\gamma$ -decay of the  $^{168}\text{Er}$  compound in the  $(n,2\gamma)$  reaction, by *Fizika B* (Zagreb) vol. 9 (2000) no.4, pp 147-168
20. Grigoriev Yu.V., Zhuravlev B.V., Synitsa V.V., Ilchev G.L., Faikow-Stanczyk H., Kim G.N. «*Investigations of the neutron cross sections of  $^{232}\text{Th}$  at the energies 20 eV – 10 keV*». *VOPROSY ATOMNOI NAUKI I TEKHNIKI*, Series: *Jad. Konstanty*, issue, 2000, p.
21. Grigoriev Yu.V., Sinitza V.V., Borzakov S.B., Ilchev G.L., Panteleev Ts.Ts., Faikow-Stanczyk H., Janeva N.B. «*Investigations of the neutron cross section and the value of alpha for U-235 over the energy range from 1meV to 2 eV*». *VOPROSY ATOMNOI NAUKI I TEKHNIKI*, Series: *Jad. Konstanty*, issue 1, 2000, pp.3 – 6.

22. Gritzay O.O., Libman V.A., Murzin A.V., Nikolenko V.G., Popov A.B., Samosvat G.S., Waschkowski W. Preliminary Measurements of the Neutron Total Cross Section of  $^{208}\text{Pb}$  at 24 keV and the Neutron Polarizability. ISINN-8. Abstracts, E3-2000-71, Dubna, 2000, p.65.
23. Khitrov V.A., Sukhovoij A.M., New technique for a simultaneous estimation of the level density and radiative strength functions of dipole transitions at  $E_{\text{ex}} < B_n$  -0.5 MeV, JINR preprint E3-2000-133, Dubna, 2000.
24. Kolachevsky N.N. *et al.*, Quantum Electronics, **30**(1), 81 (2000).
25. Korneev D.A., Bodnarchuk V.I., Yaradaikin S.P., Peresedov V.F., Ignatovich V.K., Mennelle A., Gaehler P., Reflectometry studies of the neutron coherent properties. *Phisica B*, v. **276**, p. 973, 2000.
26. Mitchell G.E., Bowman J.D., Crawford B.E., Delheij P.P.J., Frankle, C.M. Iinuma M., Knudson J.N., Lowie L.Y., Masaike A., Matsuda Y., Penttila S., Postma H., Roberson N.R., Seestrom S.J., Sharapov, E.I. Stephenson S.L., Yen Y.-F., and Yuan V.W., *Phys. Rev. C* **61**, 045503 (2000).
27. Pokotilovski Yu.N., "Abnormally large neutron polarizability or long-range strong-interaction potential at fast neutron scattering by heavy nuclei?", *Eur. Phys. Journ.*, A8 (2000) 299-302.
28. Pokotilovski Yu.N., "Interaction of ultracold neutrons with liquid surface modes as a possible reason for neutron energy spread during long storage in fluid wall traps", *Phys. Lett.*, A255 (1999) 173-177.
29. Pokotilovski Yu.N., "On the form of long-range potential observed at fast neutron scattering by heavy nuclei", *Jad. Fiz.*, 63 (2000) 1996-1999; *Physics of At. Nucl.*, 63 (2000) 1903-1906.
30. Pokotilovski Yu.N., "Possibility for low temperature fluid-wall neutron bottle with very low neutron upscattering losses", *Nucl. Instr. Meth.*, A425 (1999) 320-322.
31. Pokotilovski Yu.N., "Quasielastic neutron scattering by diffusive adsorbed hydrogen as a possible cause of the energy spreading of ultracold neutrons during long storage in traps", *Pis'ma v ZhETF*, 69 (1999) 81-86; *JETP Lett.*, 69 (1999) 91-96.
32. Pokotilovski Yu.N., "Quasielastic scattering of ultracold neutrons as possible reason for their energy spreading during long storage in closed traps", *Eur. Phys. Journ.*, B8 (1999) 1-4.
33. Popov Yu.P., Voinov A.V., Parzhitski S.S., Gundorin N.A., Serov D.G., Kobzev A.P., Sedyshev P.V., «Measurements of a Partial Cross Section for the Reaction  $^{58}\text{Ni}(n,\gamma_0)^{59}\text{Ni}$  », *Physics of Atomic Nuclei*, **52**, (2000), pp.525 – 529. (*ЯФ* **63**, (2000), 583 – 588).
34. Pospisil S., Becvar F., Granja Bustamante C., Kubasta J., Telezhnikov S.A. Secondary gamma Transitions in  $^{159}\text{Gd}$  after Neutron Capture at Isolated Resonances *J. Res. Natl. Inst. Stand. Technol.* 105, 173 (2000)
35. Prokofjevs P., Simonova L.I., Balodis M., Berzins J., Bondarenko V.A., Wirth H.F., von Egidy T., Doll C., Ott J., Schauer W., Hoff R.W., Casten R.F., Gill E.L., Honzatko J., Tomandl I., Boneva S.T., Khitrov V.A., Sukhovoij A.M., Burke D.G., Kvasil J., Mackova A., Nuclear structure of  $^{166}\text{Ho}$  studied in neutron-capture, (d,p), and (d, $^3\text{He}$ ) reactions, *Phys. Rev. C* **61**(4) (2000) 044305-1.
36. Prokofjevs P., Simonova L.I., Balodis M., Berzins J., Bondarenko V.A., Honzatko J., Tomandl I., Boneva S.T., Khitrov V.A. and Sukhovoij A. M. , The gamma -gamma coincidence measurement of  $^{166}\text{Ho}$  from the (n,gamma) reaction, *Fizika B* (Zagreb), V.**9** (2000) 97-110.
37. Sharapov E.I., Bowman J.D., Crawford B.E., Delheij P.P.J., Frankle C.M., Iinuma M., Knudson J.N., Lowie L.Y., Lynch J.E., Masaike A., Matsuda Y., Mitchell G.E., Penttila S., Postma H., Roberson N.R., Seestrom S.J., Shimizu H.M., Stephenson S.L., Yen Y.-F., and Yuan V.W., *Phys. Rev. C* **61**, 025501(2000).
38. Stephenson S.L., Bowman J.D., Corvi F., Crawford B.E., Delheij P.P.J., Frankle C.M., Iinuma M., Knudson J.N., Lowie L.Y., Masaike A., Matsuda Y., Matsuda Y., Mitchell G.E., Penttila S., Postma H., Roberson N.R., Seestrom S.J., Sharapov E.I., Shimizu H.M., Yen Y.-F., Yuan V.W., and Zanini L., *Phys. Rev. C* **61**, 045501 (2000).
39. Sukhovoij A.M., Khitrov V.A., Information capacity of the spectroscopy of the states of deformed nuclei up to the excitation energy 3-4 MeV. *Izv. RAN, ser. fiz.*, 64(3) (2000) 576-584
40. Vasilieva E.V. Sukhovoij A.M., Khitrov V.A., Influence of the structure of excited states on the process of cascade gamma-decay at energy below neutron binding energy. *Part. Nucl.*, 2000, v.**31**, pp.350-384.
41. Yen Y.-F., Bowman J.D., Bolton R.D., Crawford B.E., Delheij P.P.J., Hart G.W., Frankle C.M., Haseyama T., Iinuma M., Knudson J.N., Masaike A., Masuda Y., Matsuda Y., Mitchell G.E., Penttila S.I., Roberson N.R., Seestrom S.J., Sharapov E.I., Shimizu H.M., Smith D.A., Stephenson S.L., Szymanski J.J., Yoo H., and Yuan V.W., *Nucl. Instrum. Methods Phys. Res. A* **447**, 472 (2000).
42. Zhang Guohui, Tang Guoyou, Chen Jinxiang, Shi Zaomin, Liu Guanzhi, Zhang Xuemei, Chen Zemin, Gledenov Yu.M., Sedysheva M., Khuukhenkhuu G. Differential cross-section measurement for the  $^6\text{Li}(n,t)^4\text{He}$  reaction at 3.67 and 4.42 MeV. *Nucl. Sci. Eng* **134** (2000) 312-316.
43. Zhang Xuemei, Chen Zemin, Chen Yingtang, Tang Guoyou, Zhang Guohui, Chen Jinxiang, Gledenov Yu.M., Khuukhenkhuu G. Measurements and Calculations of the  $^{39}\text{K}$  and  $^{40}\text{Ca}$  (n, $\alpha$ ) Cross Sections at  $E_n = 4.5$  to 6.5 MeV. *Nucl. Sci. Eng* **134** (2000) 86-96.
44. Zhang Xuemei, Chen Zemin, Chen Yingtang, Yuan Jing, Tang Guoyou, Zhang Guohui, Chen Jinxiang, Gledenov Yu.M., Khuukhenkhuu G., Sedysheva M. Dispersion relations for (n,n), (n,p), and (n, $\alpha$ ) reactions on  $^{39}\text{K}$  and  $^{40}\text{Ca}$ . *Phys. Rev. C* **61** (2000) 054607.

## Theoretical investigations

1. Ignatovich V.K., Ignatovitch F.V., Andersen D.R., Algebraic description of multilayer systems with resonances. Particles and Nuclei Lett. **3** [100], pp. 48-61, 2000. in Proc. Int. Sem. on Fission, Castele of Pont d'Oye, Haabay-la-Neuve, Belgium, 6-8 Oct., 1999, edited by Wagemans C., Serot O., D'hondt P., p. 95, World Scientific, Singapore, 2000.
2. Tretyakova T.Yu., Lanskoy D.E. Structure of neutron-rich  $\Lambda$ - hypernuclei, Eur. Phys. J. A **5** 391-398 (1999)
3. Ignatovich V.K. In: Proceedings of the seminar dedicated to the 80<sup>th</sup> anniversary of M.I.Podgoretskii, p. 67-84. JINR, Dubna, 2000.
4. Lyuboshits V.V., Lyuboshits V.L. T-ivariance and polarization effects in the reactions  $p + 3He \rightarrow p+ + 4He$  and  $p+ + 4He \rightarrow p + 3He$ . Jad. Fiz., 2000, v.**63**, issue 5, pp. 837-843 (Physics of Atomic Nuclei , 2000, v.**63**, No. 5, pp. 767-773).
5. Lyuboshits V.V., Lyuboshits V.L. Transport scattering cross section and Aaronov-Bom effect on a toroidal solenoid. Preprint JINR ОИЯИ P4-2000-48 , Dubna, 2000 ; Zh.Exp. i Teor.Fiz (ZhETP), 2000, v. **118**, issue 4 (10), pp. 777-786 (Journal of Experimental and Theoretical Physics, 2000, v. **91**, No. 4, pp. 673-681).

## Applied research

1. Dovgun O., Frontasyeva M.: Heavy metal atmospheric deposition study in the Lake Baikal area. Book of Abstracts, Fifth Int. Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe, 12-14 September 2000, Prague, Czech Rep., p.179.
2. Feofanov Y.V., Smirnov L.I., Frontasyeva M., Cherchintsev V.D., Lyapunov S.M., Steinnes E.: Atmospheric deposition of heavy metals in the South Ural Mountains, Russia. Book of Abstracts, Fifth Int. Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe, 12-14 September 2000, Prague, Czech Republic, p.286.
3. Frontasyeva M.V. and Lyapunov S.M.: Comparative assessment of INAA, AAS and XRF used to study multi-element material characterization in Geolofy, Ecology and Medicine. Collaborative experience of two laboratories in Russia). Technical report, IAEA, Physics Section NAPC (October 13-18, 2000).
4. Frontasyeva M.V., Nikonorov V.V., Steinnes E.: Atmospheric deposition of trace metals studied by moss and lichens analysis: some examples from Russia. Book of Abstracts (Invited Talk), 2<sup>nd</sup> Int.Workshop on Biomonitoring of Atmospheric Pollution (with emphasis on trace elements), Azores islands, August 28-September 3, 2000, p. 28.
5. Frontasyeva M.V., Pavlov S.S., Strelkova L.P., Steinnes E., Kirpichnikova N.V., Bogdanov A.V.: How does Konakovo thermo power plant affect the environment? Book of Abstracts, VIII Int. Seminar on Interaction of Neutrons with Nuclei (Dubna, May 17-20, 2000), p. 127.
6. Frontasyeva M.V., Pavlov S.S.: Analytical Investigations at the IBR-2 reactor in Dubna. *Preprint of JINR*, E14-2000-177, Dubna, 2000 (submitted to the Proc. VIII Int. Seminar on Interaction of Neutrons with Nuclei (Dubna, May 17-20, 2000)
7. Frontasyeva M.V., Steinnes E., Lyapunov S.M., Cherchintsev V. D., Smirnov L.I.: Biomonitoring of heavy metal deposition in South Ural region: Some preliminary obtained by nuclear and related techniques. *J. Radioanal. Nucl. Chem.*, v. 245, No.2, 415-420, 2000.
8. Frontasyeva M.V., Yermakova Ye.V., Steinnes E.: Reliability of mosses (*Hylocomium splendens*, *Pleurozium schreberi* and *Calliergon giganteum*) as biomonitor of heavy metal atmospheric deposition in Central Russia. *FLNP JINR Annual Report*, 2000-81, p. 178-180, 2000.
9. Kirova-Cheshkova R., Frontasyeva M.V., Strelkova L.P., Antonov A., Mitrikov M.: Heavy metal atmospheric deposition in the Rodopi Mountains (South Bulgaria). Book of Abstracts, VIII Int. Seminar on Interaction of Neutrons with Nuclei (Dubna, May 17-20, 2000), p. 112.
10. Lucaciu A., Cuculeanu V., Frontasyeva M., Steinnes E.: Atmospheric deposition of heavy metals in Transilvania Plateau of Romania studied by the moss biomonitoring technique employing Nuclear and related analytical techniques. Book of Abstracts, Fifth Int. Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe, 12-14 September 2000, Prague, Czech Republic, p.239.
11. Morzhukhina S.V., Uspenskaya V.V., Chermnikh L.P., Khodakovskiy I.L., Frontasyeva M.V., Gundorina S.F.: Nuclear and related analytical techniques used to study anthropogenic impact on the River Sister in the vicinity of the town of Klin (Moscow Region, Russia). Book of Abstracts, VIII Int. Seminar on Interaction of Neutrons with Nuclei (Dubna, May 17-20, 2000), p. 128 (submitted to NATO ASI Series, Kluwer Academic Publishers, 2000).
12. Mosulishvili L.M., Kirkesali Ye.I., Belokobylsky A.I., Khizanishvili A.I., Frontasyeva M.V., Gundorina S.F., Oprea C.D.: Epithermal neutron activation analysis of blue-green algae Spirulina Platensis as a matrix for selenium-containing pharmaceuticals. *Preprint of JINR*, E14-2000-225, Dubna, 2000 (submitted to *J. Radioanal. Nucl. Chem.*)
13. Oprea C., Timofte L., Cozma F., Pavlov S.S., Smirnov L.I., Stan O.: Atmospheric deposition of trace elements in Southern and Western Carpathians studied by the analysis of moss samples using neutron activation analysis and atomic absorption Spectrometry. Book of Abstracts, VIII Int. Seminar on Interaction of Neutrons with Nuclei (Dubna, May 17-20, 2000), p. 116.
14. Ostrovskaya T.M.: Tables for Identification of Nuclides Formed in Nuclear Reactors. *Preprint JINR*, E14-2000-178, 2000, pp. 1-47.

15. Stan O.A., Lucaciu A., Frontasyeva M.V., Steinnes E.: New results from air pollution studies in Romania. *Preprint of JINR*, E14-2000-126, Dubna, 2000. (Delivered at Fifth Int. Symp. and Exhibition on Environmental Contamination in Central and Eastern Europe, 12-14 September, 2000, Prague, Czech Republic, p. 192).
16. Stan O.A., Zhang Zh.H., Frontasyeva M.V., Steinnes E.: Selection of appropriate moss biomonitorors for studying atmospheric elemental deposition in China. *FLNP JINR Annual Report*, 2000-81, p. 181-183, 2000.
17. Yermakova Ye., Frontasyeva M., Steinnes E., Pavlov S.S.: Epithermal Neutron Activation Analysis of Mosses used to monitor heavy metal atmospheric seposition in Tula Region. Book of Abstracts, Fifth Int. Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe, 12-14 September 2000, Prague, Czech Rep., p.191.

### Reports at Schools and Conferences

1. Ali M.A., Khitrov V.A., Sukhovoij A.M., On Stepwise Change in Heavy Nuclei Properties at 3-5 MeV Excitation Energy, Proc. Nuclear and Particle Physics Conference, 13-17 Nov 1999, Cairo, Egypt, Ed. M.N.H. Comsan, K.M. Hanna, NRC, Atomic Energy Authority Egypt, 2000, pp. 451-466.
2. Ali M.A., Khitrov V.A., Sukhovoij A.M., Possible dominance of vibrational-type excitations of heavy nucleus at  $1-2 < E_{ex} < 3-5$  MeV. In: Capture gamma-ray spectroscopy and related topics, Santa Fe, USA,1999, Ed. by Weder S., AIP, pp. 632-634.
3. Beer H., Sedyshev P.V., Mohr P., Stadler W., Oberhummer H., Rochow W., Popov Yu.P. Neutron capture of  $^{22}\text{Ne}$ ,  $^{30}\text{Si}$ , and  $^{40}\text{Ar}$  at thermonuclear energies. In: 10 Int. Symp. Capture Gamma-Ray Spectroscopy and Related Topics, Santa Fe 1999. AIP Conf. Proc. **529** Ed. by S. Wender (New York 2000) 450-457.
4. Bondarenko V.A., Honzatko J., Khitrov V.A., Sukhovoij A.M., Tomandl I. Direct experimental estimates of radiative strength functions of low-energy primary gamma-transitions in  $^{191,193}\text{Os}$ , In: Capture gamma-ray spectroscopy and related topics, Santa Fe, USA,1999, Ed. by Weder S., AIP, pp. 626-628.
5. Bondarenko V.A., Khitrov V.A., Simonova L.I., Sukhovoij A.M. On different character of cascade gamma-decay of near-magic and deformed compound nuclei, In: Capture gamma-ray spectroscopy and related topics, Santa Fe, USA, 1999, Ed. by Weder S., AIP, pp.635-636.
6. Boneva S.T., Khitrov V.A., Sukhovoij A.M., Vasilieva E.V. Two-step gamma-cascades of the  $^{188,190}\text{Os}$  compound nuclei decay, In: Capture gamma-ray spectroscopy and related topics, Santa Fe, USA, 1999, Ed. by Weder S., AIP, pp. 624-625.
7. Borzakov S. B., Faikov-Stanczyk H., Grigoriev Yu. V., Ilchev G. L., Janeva N. B., Panteleev Ts. Ts., Sinitsa V. V. «*The measurement of neutron cross-section and the  $\alpha = \sigma_\gamma/\sigma_f$  value for  $^{235}\text{U}$  within the energy range 1 meV–2 eV*». VIII International Seminar on Interaction of Neutrons with Nuclei: NEUTRON SPECTROSCOPY, NUCLEAR STRUCTURE, RELATED TOPICS, Dubna, May 17-20, 2000
8. Borzakov S. B., Faikov-Stanczyk H., Grigoriev Yu. V., Ilchev G.L., Kim G.N., Kitaev V. Ya., Panteleev Ts. Ts., Sinitsa V. V., Zhuravlov B.V. «*The measurement of the  $^{232}\text{Th}$  radiation capture cross-section within the 20 eV–10 keV energy range*». VIII International Seminar on Interaction of Neutrons with Nuclei: NEUTRON SPECTROSCOPY, NUCLEAR STRUCTURE, RELATED TOPICS, Dubna, May 17-20, 2000
9. Borzakov S. B., Faikov-Stanczyk H., Grigoriev Yu. V., Telezhnikov S. A., Panteleev Ts. Ts., Smotritsky L. M. «*Gamma-ray transitions of the  $^{118}\text{Sn}$  observed in radiative capture of thermal neutrons*». VIII International Seminar on Interaction of Neutrons with Nuclei: NEUTRON SPECTROSCOPY, NUCLEAR STRUCTURE, RELATED TOPICS, Dubna, May 17-20, 2000
10. Borzakov S.B., Panteleev Ts., Strelkov S.V., Grigoriev Yu.V., The Search for Dineutron in the Interaction of Thermal Neutrons with the Deutrons, ISINN-8, Dubna, May 17-20, 2000, Preprint JINR E3-2000-71, Dubna, 2000.
11. Florek M., Konovalov V.Yu., Pikelner L.B., Zamyatnin Yu.S., Zeinalov Sh.S. The  $^{234}\text{U}$  Neutron Induced Fission Cross-Section Near the Thermal Point.— In: Proceedings of the XIV International Workshop on Nuclear Fission Physics, 12–15 October, 1998.— Obninsk, 2000.— p. 146–149.
12. Florek M., Konovalov V.Yu., Zamyatnin Yu.S., Zeinalov Sh.S. Neutron Induced Fission Cross-Section of  $^{243}\text{Am}$  in the Energy Region from 0.8 to 50 eV.— In: Proceedings of the XIV International Workshop on Nuclear Fission Physics, 12–15 October, 1998.— Obninsk, 2000.— p. 243–248.
13. Frank A.I., Balashov S.N., Bodnarchuk V.N., Bondarenko I.V., Cimmino A., Geltenbort P., Ншгншј P., Klein A., Korneev D., Kozlov A.V., Masalovich S.V. *Neutron multilayers structures for fundamental experiments in UCN optics*. Proceeding SPIE v.3767, 2000
14. Frank A.I., Bondarenko I.V., Balashov S.N., Masalovich S.V., Nosov V.G., Gelternbort P., Ншгншј P., *Diffraction of UCN on a Moving Grating*, VIII International Seminar on Interaction of Neutrons with Nuclei (ISINN-8), 2000. pp 448.
15. Frank A.I., Bondarenko I.V., Kozlov A.V., Ншгншј P.H., Ehlers G. *Larmor Clock and Measuring of Neutron Interaction Time with Quantum Objects* . VIII International Seminar on Interaction of Neutrons with Nuclei (ISINN-8), 2000. p.215
16. Gledenov Yu.M., Machrafi R., Oprea A.I., Salatski V.I., Sedyshev P.V., Szalanski P.I. Angular Correlation in  $^{35}\text{Cl}(n,p)^{35}\text{S}$  Reaction. In: Proc. Second International Yugoslav Nuclear Society Conference. Belgrade, Yugoslavia,

Sept. 28-Oct. 1, 1998, ed. D.P.Antiж (The VINИA Institute of Nuclear Sciences Printing-House, 1999), p.565-574.

17. Gledenov Yu.M., Mashrafi R., Oprea A.I., Salatski V.I., Sedyshev P.V., Sedysheva M.V. Angular distribution in  $^{35}\text{Cl}(\text{n},\text{p})^{35}\text{S}$  at the resonance  $E_{\text{n}}=398$  eV. 8 International Seminar on Interaction of Neutrons with Nuclei. Neutron Spectroscopy, Nuclear Structure, Related Topics. ISINN-8, Dubna, May 17-20, 2000 (Abstracts) E3-2000-71, 105.
18. Gledenov Yu.M., Sedysheva M.V., Xuemei Zhang, Zemin Chen, Yingtang Chen, Guohui Zhang, Guoyou Tang, Jinxiang Chen, Khuukhenkhuu G. Measurements of the  $^{39}\text{K}(\text{n},\alpha)^{36}\text{Cl}$  and  $^{40}\text{Ca}(\text{n},\alpha)^{37}\text{Ar}$  cross sections at  $E_{\text{n}}=4.5$ -6.5 MeV. 8 International Seminar on Interaction of Neutrons with Nuclei. Neutron Spectroscopy, Nuclear Structure, Related Topics. ISINN-8, Dubna, May 17-20, 2000 (Abstracts) E3-2000-71, 68.
19. Khitrov V.A., Sukhovoj A.M., Cascade gamma- decay of heavy compound nucleus. Experimental picture for excitation energy region  $E_{\text{ex}}=B_{\text{n}}$ , In: Capture gamma-ray spectroscopy and related topics, Santa Fe, USA,1999, Ed. by Weder S., AIP, pp. 637-638.
20. Khitrov V.A., Sukhovoj A.M., Direct experimental estimation of level density of heavy nucleus observed in reaction  $(\text{n}, 2\gamma)$  at  $E_{\text{ex}}<3.5$  MeV, In: Capture gamma-ray spectroscopy and related topics, Santa Fe, USA,1999, Ed. by Weder S., AIP, pp. 534-536.
21. Khitrov V.A., Sukhovoj A.M., Furman W.I., Gundorin N.A., Matveev D.V., Serov D.G., On Possibility to Obtain New Data on Structure of Excited States of Fissile Compound-Nuclei  $^{236}\text{U}$  and  $^{240}\text{Pu}$ . In: VIII International Seminar on Interaction of Neutrons with Nuclei, Dubna, 17-20 May 2000, E3-2000-192, Dubna, 2000, p. 387-391.
22. Khitrov V.A., Sukhovoj A.M., On the Ratio of Level Densities with Different Parity in the Excitation Energy Range up to  $B_{\text{n}}$ . In: VIII International Seminar on Interaction of Neutrons with Nuclei, Dubna, 17-20 May 2000, E3-2000-192, Dubna, 2000, p. 43-50.
23. Khitrov V.A., Sukhovoj A.M., On the Ratio of Level Densities with Different Parity in the Excitation Energy Range up to  $B_{\text{n}}$ . In: VIII International Seminar on Interaction of Neutrons with Nuclei, Dubna, 17-20 May 2000, E3-2000-192, Dubna, 2000, p. 43-50.
24. Khitrov V.A., Sukhovoj A.M., Two-step cascades and the real possibility of improving the accuracy in calculating the gamma-decay parameters of heavy nucleus, In: Capture gamma-ray spectroscopy and related topics, Santa Fe, USA,1999, Ed. by Weder S., AIP, pp. 629-631.
25. Khitrov V.A., Sukhovoj A.M., Two-Step gamma-Cascades from the  $^{39}\text{K}(\text{n},\gamma)$  and  $^{79}\text{Br}(\text{n},\gamma)$  reactions. In: VIII International Seminar on Interaction of Neutrons with Nuclei, Dubna, 17-20 May 2000, E3-2000-192, Dubna, 2000, p. 382-386.
26. Koehler P.E., Gledenov Yu.M., Andrzejewski J. Improving explosive nucleosynthesis calculations through  $(\text{n},\alpha)$  measurements. 8 International Seminar on Interaction of Neutrons with Nuclei. Neutron Spectroscopy, Nuclear Structure, Related Topics. ISINN-8, Dubna, May 17-20, 2000 (Abstracts) E3-2000-71, 61.
27. Kopach Yu., Mutterer M., Singer P., Klemens M., Hotzel A., Schwalm D., Thirolf P., Hesse M., Goennenwein F., «Neutron Decay of Ternary Particles in Spontaneous Fission of », in Proc. 2<sup>nd</sup> Int.Conf. on Fission and Properties of Neutron-Rich Nuclei, 28.06-2.07.1999, St.Andrews, Scotland, editted by Hamilton J.H., Phillips W.R., Carter H.K., p. 316, World Scientific, Singapore, 2000.
28. Kopach Yu., Mutterer M., Singer P., Klemens M., Hotzel A., Schwalm D., Thirolf P., Hesse M., Goennenwein F., «Angular Correlations with Gamma-Rays and Neutrons in Ternary Fission of », in Proc. Int. Sem. on Fission, Castele of Pont d'Oye, Haabay-la-Neuve, Belgium, 6-8 Oct.,1999, editted by Wagemans C., Serot O., D'hondt P., p. 95, World Scientific, Singapore, 2000.
29. Kopach Yu., Mutterer M., Singer P., Klemens M., Hotzel A., Schwalm D., Thirolf P., Hesse M., Goennenwein F., «Anisotropy of Gamma-Ray Emission in Binary and Ternary Spontaneous Fission of », in Proc.4<sup>th</sup> Int. Conf. on Dynamical Aspects of Nuclear Fission, Casta-Papernicka, Slovakia, 19-23 Aug 1998, edited by Oganessian Yu., Kliman J., Gmuca S., p.405, World Scientific, Singapore, 2000.
30. Kopach Yu., Mutterer M., Singer P., Klemens M., Hotzel A., Schwalm D., Thirolf P., Hesse M., Goennenwein F., «Emission of and in Spontaneous Ternary Fission of », in Proc.4<sup>th</sup> Int.Conf. on Dynamical Aspects of Nuclear Fission, Casta-Papernicka, Slovakia, 19-23 Aug 1998, edited by Oganessian Yu., Kliman J., Gmuca S., p. 136, World Scientific, Singapore, 2000.
31. Kopach Yu.N.. Popov A.B., Furman W.I., Tambovtsev D.I., Kozlovsky L.K., Gonin N.N., Kliman J., «Progress and Present Status of Investigation of Fission Fragment Angular Anosotropy in the Slow Neutron Induced Fission of », in Proc.4<sup>th</sup> Int.Conf. on Dynamical Aspects of Nuclear Fission, Casta-Papernicka, Slovakia, 19-23 Aug 1998, edited by Oganessian Yu., Kliman J., Gmuca S., p.393, World Scientific, Singapore, 2000.
32. Kopach Yu.N.. Popov A.B., Furman W.I., Tambovtsev D.I., Kozlovsky L.K., Gonin N.N., Kliman J., «Angular Anisotropy of Fission Fragments from the Resonance Neutron Induced fission of Aligned Target and Role of  $J^{\pi}K$  Fission Channels», in Proc. Int. Sem. on Fission, Castele of Pont d'Oye, Haabay-la-Neuve, Belgium, 6-8 Oct.,1999, editted by C.Wagemans, O.Serot, P.D'hondt, p. 95, World Scientific, Singapore, 2000.
33. Olejniczak U., Gundorin N.A., Pikelner L.B., Przytula M., Serov D.G., Compound Nuclear States from Resonance Radiative Neutron Capture in Antimony and Tantalum. Proc. 9 Intern. Conf. on Nuclear Reaction mechan., Ed. Gadioli E., Varennna, 2000, p. 145.

34. Popov Yu.P., A.V.Voinov, S.S.Parzhitski, A.P.Kobzev, N.A.Gundorin, D.G.Serov, P.V.Sedyshev, M.V.Sedysheva. «Analysis of the Partial Neutron Capture Cross Sections by  $^{58}\text{Ni}$  nucleus». Proc. ISINN-8, JINR E3-2000-192, p.75-81, Dubna, 2000.
35. Popov Yu.P., Voinov A.V., Parzhitski S.S., Kobzev A.P., Gundorin N.A., Serov D.G., Sedyshev P.V., Sedysheva M.V. New experimental possibility of neutron spectra investigation in the neutron energy interval 10-100 keV. 8 International Seminar on Interaction of Neutrons with Nuclei. Neutron Spectroscopy, Nuclear Structure, Related Topics. ISINN-8, Dubna, May 17-20, 2000 (Abstracts) E3-2000-71, 120.
36. Sharapov E.I., Bowman J.D., Crawford B.E., Delheij P.P.J., Frankle C.M., Iinuma M., Knudson J.N., Lowie L.Y., Lynch J.E., Masaike A., Matsuda Y., Mitchell G.E., Penttila S., Postma H., Roberson N.R., Seestrom S.J., Shimizu H.M., Stephenson S.L., Yen Y.-F., and Yuan V.W., ISINN-8: VIII International Seminar on Interaction of Neutron with Nuclei, Report E3-2000-192, p.86, Dubna 2000.
37. Tambovtsev D.I., Kozlovsky L.K., Gonin N.N., Furman W.I., Kopach Yu.N., Popov A.B., Kliman J., «Investigations of Fission Fragments Angular Anisotropy for Low Energy Neutron Induced Fission of Aligned Target», in Proc. 14<sup>th</sup> Int. Workshop on Nuclear Fission Physics, Oct 1999, p. 176, 2000.
38. Tretyakova T.Yu. , Lanskoy D.E. Neutron-rich  $\Lambda$ -hypernuclei:  $\Sigma$  admixture and production in the ( $K^-,\pi^+$ ) reaction, in Proc. Of VII International Conference on Hypernuclear and Strange Particle Physics HYP2000, Torino, Italy, 2000, to be published in Nucl. Phys. A
39. Tretyakova T.Yu., Tretyakova S.P., Calabretta L., Itkis M.G., Kozulin E.M., Kondratiev N.A., Maiolino C., Pokrobski I.V., Prokhorova E.V. Rusanov A.Yu., «Investigation of the Fusion-Fission Reaction », in Proc. Int.Conf. on Nuclear Physics «Nuclear Shells - 50 Years», Dubna, Russia, 1999, edited by Oganesian Yu.Ts.and Kalpakcheeva R., p.151, World Scientific, Singapore, 2000.
40. Voinov A.V., Popov Yu.P., Parzhitski S.S., Kobzev A.P., Gundorin N.A., Serov D.G., Sedyshev P.V., Sedysheva M.V. Analysis of the partial neutron capture cross sections of  $^{58}\text{Ni}(n,\gamma)^{59}\text{Ni}$  reaction. 8 International Seminar on Interaction of Neutrons with Nuclei. Neutron Spectroscopy, Nuclear Structure, Related Topics. ISINN-8, Dubna, May 17-20, 2000 (Abstracts) E3-2000-71, 46.
41. Voinov A.V., Popov Yu.P., Sedyshev P.V., Kobzev A.P., Serov D.G., Parzhitski S.S., Gundorin N.A., Sedysheva M.V. Measurement of the partial radiative neutron capture cross section on  $^{63}\text{Cu}$ . 8 International Seminar on Interaction of Neutrons with Nuclei. Neutron Spectroscopy, Nuclear Structure, Related Topics. ISINN-8, Dubna, May 17-20, 2000 (Abstracts) E3-2000-71, 100.
42. Voinov A.V., Yu.P.Popov, S.S.Parzhitski, A.P.Kobzev, N.A.Gundorin, D.G.Serov, Experimental Checking for Possibility of the Neutron Spectrum Measurement in Neutron Energu Interval 10-150 keV. Proc. ISINN-8, JINR E3-2000-192, p.445, Dubna, 2000.
43. Tambovtsev D.I., Kozlovsky L.K., Gonin N.N., Doroshenko A.Yu., Kopach Yu.N., Popov A.B., Furman W.I. Measurement of the superfine bond constant in the crystal URN», 15<sup>th</sup> Int.Workshop on Nuclear Fission Physics, 2-5 Oct, 2000.

## THE IBR-2 SPECTROMETER COMPLEX AND COMPUTATION INFRASTRUCTURE

- Levchanovski F., Gebauer B., Schulz Ch.. A PCI DAQ Board for a Two-Dimentional High-Resolution Delay Line Detector. Book of Abstracts of the Second Intern. Workshop on Data Acquisition Systems for Neutron Experimental Facilities. June 5-7, 2000, Dubna, Russia, p.17.
- Butenko V., Levchanovski F., Prikhodko V. RTOF-Correlator of the Parallel-Serial Type for Fourier Diffractometers at Steady-State Neutron Sources, ibid. p.20.
- Zhuravlev V.et al. Control System of Neutron Beam Choppers on the Physical Instruments at the IBR-2 Reactor, ibid., p.21.
- Drozdov V.. Four-Processor Block for the Measurement and Acquisition of Correlation Spectra from the High Resolution Spectrometer FSD, ibid. p.26.
- Ermilov V.G.et al. System for Diagnostic and Monitoring of the IBR-2 Reactor State. Data Acquisition and Storage, ibid. p.30.
- Kirilov A.. Current State and Prospects of the IBR-2 Instrument Control Software, ibid. p.36.
- Litvinenko E.. The Implementation of NeXus Data Format in OpenG2 Software Package, ibid. p.39.
- Litvinenko E., Semenov R.. The Experience with TACO Testing, ibid. p.40.
- Murashkevich S., Kirilov A.. DAQ Control in the SONIX Control Software, ibid. p.41.
- Petukhova T., Kirilov A.. Stepper-Motor in the SONOX Control Software, ibid. p.42.
- Astakhova N., Kirilov A.. Sample Environment Characteristics Visualization Program in the SONIX Control Software, ibid. p.43.
- Astakhova N., Kirilov A.. Temperature Control in the SONIX Control Software, ibid. p.44.
- Salamatin I., Astakhova N., Kirilov A.. Remonte Control of the YuMO Instrument, ibid. p.45.
- Petukhova T.. The Software Control System of X-ray Diffractometers DRON and SAX, ibid. p.46.
- Levchanovski F., Nikiforov A.. The Software for Spectra Accumulation on the Basis of the DSP TMS320C40 Signal Processor for Neutron Spectrometers at the IBR-2 Pulsed Reactor, ibid. p.48.
- Avdeev M., Prikhodko A.. C<sup>++</sup> Library Instrument to Treat Experimental numbers Taking the Errors Propagation

- into Account, *ibid.* p.49.
- 17. Avdeev M., Prikhodko A.. EXPDATLIB C<sup>++</sup> Library Based on STL. Instrument to Treat Experimental Data, *ibid.* p.50.
  - 18. Levchanovski F., Polyakov V.. MEZZANINES: The Way for a Common Specification for Interfaces Between Layers in the Neutron Spectrometers DAQ Systems, *ibid.* p.56.
  - 19. Gebauer B., Schulz Ch., Richter G., Levchanovski F., Nikifiriv A.. Development of a Hybrid MSGC Detector for Terminal Neutron Imaging with a MHz Data Acquisition and Histogramming System. In Proc. of the Imaging 2000 Conference, June 28 – July 1,2000, Stockholm Sweden (Submitted to NIM).
  - 20. Zhidkov E.P., Litvinenko E.. Some Methods of Neutron Scattering Data Analysis, Computer Physics Communication 127 (2000), 229-241.
  - 21. Fromme M., Hoffmann-Schulz G., Litvinenko E., Ziem P.. BEAN – A New Standard Program for Data Analysis at BER-II, Proc. of XIth IEEE NPSS Real Time Conference, Santa Fe, USA, 1999, 354-358.