PRELIMINARY PROGRAM

"SOLITONS, COLLAPSES AND TURBULENCE:
Achievements, Developments and Perspectives"
August 18-22, 2002, Chernogolovka

Saturday, August, 17

- 16:00 - 20:00
  Registration: the hotel "Chernogolovka"

Sunday, August, 18

- 9:00 -10:00
  Registration: Institute of Solid State Physics
- 10:00-10:10 **Welcome**

Chairman: **V.E.Zakharov**

- 10:10-10:40
  E.A.Kuznetsov
  Collapse in hydrodynamics and Kolmogorov spectrum
- 10:40-11:10
  A.P. Veselov
  Yang-Baxter maps and soliton theory
- 11:10-11:30
  Coffee break

Chairman: **D. Kaup**

- 11:30-12:00
  <u>P.-L. Sulem</u>, T. Passot and D. Laveder
  Alfvén wave filamentation
- 12:00-12:30
  V. Gerdjikov
  Real Hamiltonian forms of integrable models
- 12:30-14:00 **Break for lunch**

Chairman: **A.V. Mikhailov**

- 14:00-14:30
  <u>P.L. Caillol</u> and R.H. Grimshaw
  Asymmetric vortices generated by a critical-layer type interaction
- 14:30-15:00
  A.B. Borisov
  Spiral vortices in ferromagnetic(n -field)
- 15:00-15:30
  A. Zhiber
  Laplace invariants and generalised invariants for Toda chain
- 15:30-15:50 **Coffee break**

Chairman: **F.V. Dolzhansky**

- 15:50-16:20
  A. Maltsev
  Weakly non-local Poisson brackets and there averaging in Whitham method
- 16:20-16:50
  V.G. Suvorov and <u>N.M.Zubarev</u>
  Formation of singularities on the surface of conducting and dielectric fluids in an electric field
- 16:50-17:00 **Break**

- 17:00-17:30
  E. Pelinovsky, A. Slunyaev, T. Talipova and C. Kharif
  Nonlinear models of the freak wave formation from a random sea
- 17:30-18:00
  A.O. Korotkevich
  On the Doppler distortion of the sea-wave spectra

Monday, August 19

Chairman: **R. Choudhury**

- 9:00-9:30
  A. Mikhailov and V. Novikov
  Perturbative Symmetry Approach
- 9:30-10:00
  F.V. Dolzhansky and V.M. Ponomarev
  On mechanical prototypes of the fundamental hydrodynamical invariants and manifolds
- 10:00-10.30
  D. Kaup and H. Steudel
  Second Harmonic Generation as an Inverse Problem
- 10:30-11:00 **Coffee break**

Chairman: **S.K. Turitsyn**

- 11:00-11:30
  B.I. Sturman, G. F. Calvo, F.Agulló-López, and M. Carrascosa
  Singular nonlinear response and soliton-like beam propagation in fast photorefractive crystals
- 11:30-12:00
  A. Protogenov and V.A. Verbus
  Energy Bounds of Linked Vortex States
- 12:00-12:30
  G.A. Alekseev
  Nonlinear interaction of plane gravitational and electromagnetic waves in general relativity
- 12:30-14:00 **Break for lunch**

Chairman: **P.-L. Sulem**

- 14:00-14:30
  L. Bergé and J.J. Rasmussen
  Collapsing dynamics of attractive Bose-Einstein condensates
- 14:30-15:00
  V.Yu. Novokshenov
  Whitham deformations of integrable systems and multi-phase autoresonances
- 15:00-15:30
  P.M. Lushnikov
  Collapse of Bose-Einstein condensate by dipole-dipole forces
- 15:30-16:00 **Coffee break**

Chairman: **V. Gerdjikov**

- 16:00-16:30
  L V Bogdanov, E V Ferapontov *Surfaces in projective differential geometry and Veselov-Novikov hierarchy*
- 16:30-17:00
  I. Habibullin
  Boundary conditions for multi-dimensional integrable equations
- 17:00-17:30
  E.M. Kudriavtsev, S. D. Zotov, A. I. Kudriavtsev
  Slow solitary waves with discrete velocities traveling trough the water after excitation on the surface by IR laser pulse

Tuesday, August 20

Chairman: **G. Fraiman**

- 9:00-9:30
  M. Chertkov and V. Lebedev
  Acceleration of chemical reaction by chaotic mixing
- 9:30-10:00
  F. Dias
  Kolmogorov spectra of weak turbulence in media with two types of interacting waves
- 10:00-10.30
  Yu. N. Ovchinnikov and I.M.Sigal
  Collapse in the nonlinear Schrodinger equation of critical dimension sigma=1, D=2
- 10:30-11:00 **Coffee break**

Chairman: **L. Berge**

- 11:00-11:30
  S.K. Turitsyn
  Soliton regeneration and unlimited distance optical data transmission
- 11:30-12:00
  R. Choudhury
  Integrability characteristics and coherent structures of integrable two-dimensional generalizations of NLS type equations
- 12:00-12:30
  A. Pogrebkov
  KPII: Some new results and open problems
- 12:30-14:00 **Break for lunch**

Chairman: **A. Shagalov**

- 14:00-14:30
  G. Fraiman
  Collision operator in super strong laser fields in plasmas
- 14:30-15:00
  L. Kalyakin
  Asymptotic analysis of the autoresonance phenomenon
- 15:00-15:30
  E.V. Koposova, S.N. Vlasov
  The compression of pulses of an electromagnetic field in dielectric plates
- 15:30-15:50**Coffee break**

Chairman: **P. Grinevich**

- 15:50-16:20
  A.K. Komarov, K. P. Komarov
  Dissipative Soliton Lasers: Bistability, Multistability, Optical Turbulence
- 16:20-16:50
  V. Adler, Bobenko A.I., Suris Yu.B.
  Integrable discrete equations on quad-graphs
- 16:50-17:00 **Break**
- 17:00-17:30
  E. Maslov, A. Shagalov
  A point-to-point description of the bubble wall structure
- 17:30-18:00
  A. Zabolotskii
  Integrable models for a few cycle pulses evolution

Wednesday, August 21

Chairman: **A. Pogrebkov**

- 9:00-9:30
  N.N. Rosanov
  Nonparaxial spatial optical solitons - "optical needles"
- 9:30-10:00
  Yan Fyodorov and E. Strahov
  On correlation functions of spectral determinants of random Hermitian matrices
- 10:00-10:30
  A. Fordy
  TBA
- 10:30-11:00 **Coffee break**

Chairman: **J.J. Rasmussen**

- 11:00-11:30
  A. B. Ezersky and O.E. Polukhina
  Excitation of surface wave solitons in shallow water resonator: experiment and theory
- 11:30-12:00
  M.Abid and A. Verga
  Vortex sheet dynamics and turbulence
- 12:00-12:30
  P.G. Grinevich
  Topological charge of the finite gap Sine-Gordon solutions
- 12:30-14:00 **Break for lunch**

Chairman: **V.Yu. Novokshenov**

- 14:00-14:30
  A. Degasperis, S.V. Manakov, P. Santini
  On the initial-boundary value problems for the linear and soliton PDEs
- 14:30-15:00
  V. Naulin, R. Basu and J.J. Rasmussen
  Particle diffusion and density flux in anisotropic turbulence
- 15:00-15:30 **Coffee break**
- 15:30-18:00 **Poster session**
- 19:30 **Reception**

Thursday, August 22

Chairman: **A. Verga**

- 9:00-9:30
  L.A. Ostrovsky
  Strongly nonlinear solitons in a two-layer fluid.
- 9:30-10:00
  L. Bergé and H. Ward
  Temporal shortening of self-guided femtosecond pulses
- 10:00-10.30
  A.G. Shagalov
  Emergence and stability of nonuniform V -states in ideal fluids
- 10:30-11:00 **Coffee break**

Chairman: **L.A. Ostrovsky**

- 11:00-11:30
  N.N. Romanova, S.Yu. Annenkov
  Three-wave resonant interactions of spectrally narrow wavepackets in weakly unstable media
- 11:30-12:00
  E. Gromov
  Short vector solitons. Stability.
- 12:00-12:30
  A. Orlov
  Perturbation series for matrix integrals, symmetric functions and soliton theory
- 12:30-14:00 **Break for lunch**

Chairman: **A.P. Veselov**

- 14:00-14:30
  V.G.Marikhin
  Integrable systems with quadratic nonlinearity in Fourier space
- 14:30-15:00
  A. Zenchuk
  Construction of particular solutions to equations of mathematical physics using matrix algebraic equation
- 15:00-15:30
  A. Kats
  On the variational principles and canonical description of the MHD flows.
- 15:30-16:00 **Coffee break**

Chairman: **E.A. Kuznetsov**

- 16:00-16:30
  V.P. Ruban
  Current-sheet formation in incompressible electron magnetohydrodynamics
- 16:30-17:15
  V.E. Zakharov
  Bose condensation of nonlinear waves with application to wind-driven sea and defocusing media
- 17:15-17:45
  General discussion