

The Fourth Russian Conference on Magnetohydrodynamics

List of accepted abstracts (2021-05-19)

- Akhmet'ev P. The magnetic helicity and higher helicity invariants as constraints for dynamo action
- Antipin A., Mindubaev M. Conditions for the formation of the magnetic field at the early stages of the Earth's evolution
- Akhmedagaev R., Zikanov O., Listratov Ya. Magnetoconvection in a horizontal duct flow at very high Hartmann and Grashof numbers
- Benard S., Landgraf S., Weber N., Weier T. MHD driven localized short circuits in liquid metal batteries
- Belov S., Molevich N., Zavershinskii D. Dispersion of slow magnetoacoustic waves caused by thermal misbalance and finite size of magnetic flux tube
- Beketova E., Nechaeva O., Dikansky Yu. Specific deformation of drops of magnetic emulsion in a variable electric field
- Brazhnik D., Bolotin K. Numerical simulation of melting and stirring in induction furnace with graphite crucible
- Brestensky J., Filippi E. Magnetoconvection with anisotropic diffusion as a tool to investigate the dynamics of dynamo regions
- Belyaev I., Luchinkin N., Chernysh D., Melnikov I., Sardov P., Listratov Ya., Razuvanov N., Frick P. Limits of magneto-convective fluctuations in liquid metal downflow in vertical channels affected by a transverse magnetic field
- Chekanov V. Instability of a flat surface of a magnetic fluid at the boundary with water in an electric field
- Chudnovsky A., Ivochkin Yu., Jakovics A., Pavlovs S. Comparison of computational and measurement results for electrovortex flow in experimental setup with liquid metal and power supply over top and bottom electrodes
- Cherepanov I., Smorodin B. Transient and permanent convection of colloid in a horizontal cell
- Dobroserdova A., Maltseva E., Sanchez P, Kantorovich S. Magnetoactive elastomers: molecular dynamics simulations of magnetic properties
- Dolgikh V., Pavlinov A., Kolesnichenko I. Influence of MHD-channel geometry on pressure drop
- Eltischev V., Losev G., Kolesnichenko I. Metal Pad Rotation instability experimental model
- Elfimova E, Zverev V., Rusanov M., Kuznetsov M. Simple approximate formula for susceptibility of concentrated ferrofluid in a DC and AC magnetic fields
- Frick P., Eltishchev V., Mandrykin S., Kolesnichenko I. Evolution of strong electrovortex flow under external magnetic field in cylindrical cell
- Golbraikh E. Could Earth's solid core be a magnet?

- Giesecke A., Pizzi F., Garcia F., Stefani F. Dynamo action of the large scale flow in a precessing cylinder
- Garcia F., Ogbonna J., Gundrum T., Seilmayer M., Giesecke A., Stefani F. The magnetized spherical couette system: from numerics to experiments
- Glukhov A., Sidorov A. Convection of a magnetic fluid in vertical connected channels in a permanent magnetic field
- Gruzd S., Krivilyov M., Morozov G. Electromagnetic stirring in continuous casting of steel
- Gupalo M., Novak E., Kantorovich S. Magnetic and structural properties of magnetic elastomers
- Illarionov E., Sokoloff D. Finite memory time and anisotropy effects for the initial stage of dynamo process
- Ivanov A., Khokhryakova C., Pshenichnikov A., Somov S., Koskov M. Floating of non-magnetic and superparamagnetic solids in ferrofluids: inductive approach
- Ivanov A., Kuznetsova O., Camp P. Mathematical modelling of the collective magnetization relaxation dynamics of Brownian magnetic nanoparticles
- Justel P., Rohrborn S., Frick P., Galindo V., Gundrum T., Schindler F., Stefani F., Stepanov R., Vogt T. Experimentally synchronizing the large-scale circulation in a cylindrical Rayleigh-Benard cell by tide-like electromagnetic forcing
- Khripchenko S. Vertical heat transfer in a cylindrical vessel with liquid metal under alternating exposure to traveling and rotating magnetic fields
- Korovin V. Method for calculating the complex amplitudes of the electromagnetic field in a cylindrical channel of an induction plasmatron
- Korovin V. Influence of nonlinearity of magnetization law on Kelvin-Helmholtz instability for horizontal relative motion of ferrofluid and gas flows in a longitudinal magnetic field
- Kukharev A. Peculiarities of electrovortex flows in a multi-electrode arc furnace at DC and low frequency AC power supply
- Klevs M., Birjukovs M., Zvejnieks P., Jakovics A. Dynamic mode decomposition of MHD bubble chain flow
- Krauter N., Eckert S., Gundrum T., Stefani F., Wondrak T., Khalilov R., Dimov I., Frick P. Inductive system for magnesium level detection in a titanium reduction reactor
- Kumar V., Giesecke A., Gundrum Th., Pizzi F., Ratajczak M., Stefani F. Influence of the precession angle on the flow inside a precessing cylinder
- Kaiser M., Kantorovich S. Separation of active-dipolar cubes in applied fields
- Kolesnikov Y., Krasnov D., Listratov Ya., Belyaev I., Pyatnitskaya N., Sviridov E., Zikanov O. Transformation of submerged liquid metal jets under strong magnetic fields
- Khokhryakova C., Kolesnichenko E. Waves on a free surface of a magnetic fluid in alternating vertical magnetic field
- Khripchenko S., Dolgikh V., Siraev R. Injection of nanoparticles of boron nitride in liquid aluminum during its MHD-stirring

- Khokhryakova C., Mizeva I., Shmyrova A., Shmyrov A. Experimental study of the magnetic fluid surface tension variation in the uniform magnetic field
- Kuznetsova A., Elfimova E. The specific loss power of a system of single-domain interacting superparamagnetic particles
- Karasev T., Teimurazov A., Perminov A. Modelling of liquid magnesium convection in a titanium reduction apparatus
- Kochurin E., Zubarev N. Numerical simulation of the free surface magnetohydrodynamic wave turbulence
- Kolesnichenko I., Eltishchev V., Mandrykin S., Pavlinov A., Frick P. Electro-vortex flow in cylindrical cell
- Khalilov R., Pavlinov A., Kolesnichenko I., Mamykin A., Shestakov A., Frick P. Travelling magnetic field pumps for liquid metals: numerical and experimental studies
- Kolesnichenko I., Pavlinov A., Mamykin A., Khalilov R. Liquid metal flow generation in cylindrical cell by smart inductor
- Khalilov R. Liquid metal level measurement
- Losev G., Mamykin A. Electromagnetic measurements of non-ferrous metals conductivity
- Mikhailova Y. Electromagnetic field in the flowmeter channel for liquid metals
- Mikhailov E. Eigenfunctions in different galactic dynamo models
- Mamatsashvili G., Stefani F., Hollerbach R., Rudiger G. A new type of double-diffusive helical magnetorotational instability in rotating flows with positive shear
- Mantsurov A., Makarov D., Petrov D. Statistical theory of magnetic field induced phase transitions in ferronematics
- Mishra A., Mamatsashvili G., Galindo V., Stefani F. Convective, absolute and global azimuthal magnetorotational instability
- Mostarac D., Sanchez P., Kantorovich S. Rheology of nanoscale polymer-like chains with ferromagnetic nanoparticles
- Malyshev K., Mihailov E., Teplyakov I. Nonstationary electro-vortex flow in hemispherical bowl with external magnetic field: analytical Stokes solution
- Mitrofanova O. Simulation of vortex and magnetic fields in three-dimensional flows of conductive media
- Mitrofanova O., Pozdeeva I. Generation mechanisms of vortex-wave processes in conductive media
- Merkulov D., Pelevina D., Turkov V., Naletova V. Four-parameter model of magnetizable elastomers viscoelastic behavior
- Mandrykin S., Kolesnichenko I. The spin-up process of the electro-vortex flow subject to the external magnetic field
- Mamykin A., Mandrykin S., Losev G. Features of the large-scale circulation behavior during Rayleigh-Benard convection in a square cylinder filled with liquid sodium

- Mamykin A., Kolesnichenko I., Golbraikh E., Pavlinov A. Temperature correlation method application to the problem of measuring the flow rate of liquid sodium
- Nikulin I., Demin V. Numerical simulation of heat and mass transfer in a metal melt and deformations in a dielectric film during induction melting
- Novikau I., Novak E., Sanchez P., Kantorovich S. Magnetic nanogel in shear flow
- Nekrasov O., Smorodin B. The electroconvective flows of a low conducting liquid in a steady and modulated electric field
- Omelyanchik A., Antipova V., Gritsenko C., Kolesnikova V., Peddis D., Levada K., Amirov A., Rodionova V. Tuning the magnetoelectric effect in polymer-based nanocomposites
- Obukhov D., Chaika P., Krizhanovsky S., Labusov A., Preslitsky G., Tukeev P., Federyaeva V. Development of electromagnetic pump for the second loop of the MBIR reactor
- Ozernykh V., Kolesnichenko I. Electromagnetic forces acting in a representative volume of liquid metal with inclusions of various shapes
- Okatev R., Kolesnichenko I. Impact the inhomogeneity of electric conductivity on MHD processes
- Proskurin A. Stability of MHD flow in a 90-degree bend
- Petrov D. On the isotropic-nematic liquid crystal phase transitions in a solution of polydisperse magnetic disks
- Petrov D. Effective field method in the physics of ferromagnetic liquid crystal suspensions
- Personnetaz P., Klopper T., Benard S., Kubeil C., Landgraf S., Weber N., Weier T. Compositional convection in liquid metal electrodes
- Pipin V. Nesting magnetic activity on the fast rotating solar analogs
- Poperechny I. Relaxation spectrum of a superparamagnetic nanoparticle, suspended in a liquid: the effect of an applied field
- Pyanzina E., Gupalo M., Akisheva A., Naumov E., Novak E. Self-assembly supramolecular magnetic polymers with different monomers
- Pavlinov A., Khalilov R., Mamykin A., Kolesnichenko I. Electromagnetic flowmeter for liquid metals: calculation, design and calibration
- Reshetnyak M. The joint cooling model of the core and mantle
- Rosenberg M., Sanchez P., Petrov D., Sebastian N., Mertelj A., Kantorovich S. Phase behavior of charged magnetic nanoplatelets
- Riashchikov D., Pichugin S., Molevich N. The influence of ion-neutral collisions on the amplification of thermally unstable magnetoacoustic waves
- Rohrborn S., Justel P., Galindo V., Stefani F., Stepanov R. Numerical simulation of tidal synchronization of the large-scale circulation in Rayleigh-Benard convection with aspect ratio 1
- Sokoloff D., Frick P. Continuous component of solar and stellar activity spectra in light of dynamo theory

- Starchenko S. The simplest linear Solar dynamo and non-linear geodynamo
- Starchenko S., Yakovleva S. Exploratory statistical analysis of Wolf numbers, their time derivatives and variation times of the solar activity
- Stefani F., Horstmann G.M., Stepanov R., Weier T. Possible synchronization mechanisms for Short- and long-term cycles of the solar dynamo
- Sukhanovskii A., Vasiliev A. Heat transfer in case of mixed boundary conditions
- Smolianov I., Shmakov E., Baake E. Comparison of Q2D and 3D models of MHD duct flow instability
- Smolianov I., Shmakov E., Baake E. Natural convective in MHD duct flow
- Sadilov E. Joint influence of magnetic field and normal vibrations on the instability of two-layer system, containing magnetic and non-magnetic fluids
- Sanchez P, Kantorovich S. Applying mass-spring models with tunable poisson's ratio to the computer modeling of magnetic elastomers
- Shvydkiy E., Smolyanov I., Baake E. Interaction of buoyancy and EM forced convection during horizontal directional solidification
- Subbotin I., Ivanov A. Mathematical modelling of static magnetic properties of multicore particles
- Sokolov I., Losev G., Shvydkiy E. Impurity distribution in a rectangular cell under travelling magnetic field
- Soldatov I., Mishustova Z. The effect of magnetic field on waves in a centrifuged conducting viscous layer inside a rotating cylindrical container
- Teplyakov I., Vinogradov D., Ivochkin Yu., Chudnovsky A., Jakovics A., Pavlovs S. Velocity measurements in the electrovortex flow in the system with two submerged electrodes
- Uvarov Y., Bykov A. Study of astrophysical magnetic turbulence with new generation X-ray polarimeters. Application to supernova remnants
- Velt I., Mikhailova Yu., Sudarikov V. Elimination of magnetic flowmeters nonlinearity caused by the MHD-effect
- Velt I., Mikhailova Yu., Sudarikov V. Magnetic flowmeter for fast sodium reactors
- Vergeles S., Ogorodnikov L. Coherent columnar vortex in three-dimensional rotating turbulent flow: structure and spatial correlations
- Yachikov I. Study of keeping a permanent magnet suspended in a pulsed magnetic field
- Yachikov I., Loginovskiy O., Shestakov A. Hydrodynamic characteristics and heat transfer in the laminar cocurrent flow of two parallel flows of liquid metals
- Yanovskii A., Simonovskii A. An effect of the magnetic field on heat transfer of boiling magnetic fluid on a horizontal heater with spot heat input
- Yanovskii A., Simonovskii A., Shatalov N., Starenkova Yu. Hydro-gas dynamics of vaporization in a magnetic liquid in a magnetic field

- Yushkov E., Allahverdiyev R., Sokoloff D. Dynamo model in anisotropic uniform turbulent flow with shorttime correlations
- Yushkov E., Malova H., Maiewski E., Sokoloff D. Magnetic field symmetries in the frame of spherical dynamo for exoplanets and host stars
- Zubarev A., Chirikov D., Zablotsky D. Viscoelasticity modules in ferrofluids with clustered nanoparticles
- Zakinyan A. Transfer phenomena in magnetic fluid composites
- Zibold A. Nonstationary instability of axisymmetric flow of a liquid in a rotating magnetic field
- Zverev V., Novak E., Gupalo M., Kantorovich S., Sanchez P. Magnetic and rheological properties of supracolloidal magnetic polymers in a Poiseuille flow
- Zavershinskii D., Kolotkov D., Molevich N., Riashchikov D., Belov S. On some properties of slow magnetoacoustic and entropy waves in the heat-releasing coronal plasma