

Chechetkin Valeri

Position:

Main scientist, professor of Keldysh Institute of Applied Mathematics RAS

Period covered: 1968-present

Main scientist of Institute of Physics of Stochastic Problem of RNC “Kurchatov Institute”

Period covered: 2006-present

Professor M I P H U , Moscow, Russia

Period covered: 1998-present



I Scientific Work

Fluid Dynamics:

The Raleigh-Taylor instability and other hydrodynamic instabilities, Turbulence, Shocks, Explosions;

Combustion:

Turbulent flames, Detonation, Flame ignition;

Nonlinear Physics:

Front propagation, Instabilities, Fractals;

Electrodynamics and Plasma Physics:

Plasma instabilities, Magnetohydrodynamics;

Astrophysics:

Supernova events, Thermonuclear explosions, White dwarfs, Jets, Nucleosynthesis, Neutron Stars, Accretion Discs, Black Holes, High-Particles in Astrophysics.

Leader in 6 successful projects

II Conferences and educational activities

Conferences and Other External Scientific Work

1. Gamow Summer School “Astronomy and beyond: Astrophysics, Cosmology, Radioastronomy, High Energy Physics and Astrobiology”, 17-23 August, 2009, Odessa, Ukraine

2. Japan-Russia Symposium on “Numerical Experiment in Hydrodynamical Instability and Turbulence with High-Performance Computing, Moscow 10-13 November, 2009, Russia
3. An international conference "Nonstationary Phenomena and Instabilities in Astrophysics" September 08-11 2009 , Volgograd, Russia.

Diploma thesis supervision

2 in 2009

2009 List of Publications

Books and monographs 4

Last book “The physical foundations of fluidodynamics:

Macroscopic and kinetic approaches”, Moscow 2007, pp1-212

Articles in refereed journals 220

1. Fimin, N. N.; Chechetkin, V. M., “The collapse of matter and the formation of black holes. Conceptual aspects”, Astronomy Reports, Volume 53, Issue 9, pp.824-838, 2009
2. Chechetkin, V. M.; D'Yachenko, V. F.; Ginzburg, S. L.; Paleichik, V. V.; Fimin, N. N.; Sudarikov, A. L., “On the generation mechanism of hard cosmic gamma-ray emission from AGN jets”, Astronomy Reports, Volume 53, Issue 6, pp.501-509, 2009
3. Galanin, M. P.; Lukin, V. V.; Chechetkin, V. M., “Mathematical modeling of a jet in the vicinity of a compact object”, Astronomy Reports, Volume 53, Issue 4, pp.295-309, 2009
4. Belotserkovskii, O. M.; Denisenko, V. V.; Konyukhov, A. V.; Oparin, A. M.; Troshkin, O. V.; Chechetkin, V. M.,” Numerical stability analysis of the Taylor-Couette flow in the two-dimensional case”, Computational Mathematics and Mathematical Physics, Volume 49, Issue 4, pp.729-742, 2009
5. Pascal Chardonnet · Valery Chechetkin · Lev Titarchuk, “On the pair-instability supernovae and gamma-ray burst phenomenon”, Astrophys Space Sci.,2009

Invited papers in books 12

2008-2009

1. Vereshchagin, Gregory; Chechetkin, V. M.; Dyachenko, V. F.; Ginzburg, S. L.; Fimin, N. N.; Ruffini, Remo; Siutsou, Ivan, “On kinetic instabilities in collisionless ultra-relativistic streaming cold electron-proton plasma”, American Physical Society, 2009 APS April Meeting, May 2-5, 2009
2. V. M. Chechetkin, V. Bychkov and I. V. Baikov, “Neutrino radiation on early stage of

Collapse”, Conference Proceedings Vol. 98 “Frontier Objects in Astrophysics and Particle Physics”F. Giovannelli and G. Mannocchi (Eds.)SIF, Bologna, 2009

Conference reports

24