

CURRICULUM VITAE

Name: Alexandre Lazarian
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Current Research Interests:

Interstellar Turbulence and its Implications
MHD Processes: Magnetic Reconnection
Physics of Interstellar and Circumstellar Dust
Molecular Clouds and Star Formation
CMB Foregrounds
Interstellar, Circumstellar and Interplanetary Magnetic Fields
Cosmic Ray Physics

Education:

1995 **Ph.D.** in Applied Mathematics from University of Cambridge (UK)
Thesis Title: *Statistical Study of Astrophysical Processes*
1988 M.Sc. in Theor. Physics from Moscow Institute of Physics and Technology
1986 B.Sc. in Astrophysics from Moscow Institute of Physics and Technology

Faculty positions:

2004 - present Associate Professor, University of Wisconsin-Madison
1999- 2004 Assistant Professor, University of Wisconsin-Madison

Postdoctoral Research:

Sept. 1998- Aug. 1999 Long-term Senior Fellow, CITA, Toronto
Sept. 1995- Aug. 1998 Research Associate, Princeton University Observatory
May 1995- July 1995 Visiting Postdoctoral Researcher, CfA, Harvard
Dec.1994- Aug.1995 Postdoctoral Research Fellow, Univ. of Texas, Austin

Graduate Research:

1991-1994 Ph.D. Student, DAMTP, Univ. of Cambridge (UK)
1990-1991 Visiting Scholar, Dept. of Theoretical Physics, Oxford University
1988-1990 Research Student, Dept. of Theoretical Physics,
Lebedev Physical Institute, Moscow

Professional Societies:

Member of the International Astronomical Union
Member of the American Physical Society
Full Member of the American Astronomical Society

Recent Teaching:

UW-Madison:

Fall 2004 Graduate seminar course, Ast. 920
Spring 2004 Graduate course "Interstellar Medium", Ast. 720
Fall 2003 Graduate course "General Astrophysics", Ast. 700
Spring 2003 Undergraduate course "Astronomy 103"
Fall 2002 Graduate course "General Astrophysics", Ast. 700
Spring 2002 Undergraduate course "Astronomy 200"
Fall 2001 Graduate course "General Astrophysics"

Fall 2000 Graduate course "General Astrophysics", Ast. 700
Spring 2000 Graduate course "Physics of Interstellar Medium", Ast. 720
Fall 1999 Graduate course "Selected Chapters of ISM", Ast. 920

University of Toronto:

Spring 1999 1/4 of a Graduate course "Galaxies II"
Spring 1999 Graduate minicourse "Physics of Interstellar Medium"

Supervision of Postdocs (results)

Sept. 2000 - Sept. 2003 Jungyeon Cho, postdoc, 7 papers published, 5 reviews
offered a Fellowship at CITA in 2003
faculty at Chungnam University since 2004
Jan. 2005 - present Grzegorz Kowal, postdoc, 1 paper in preparation

Supervision of Students (results)

Sept. 2000 - 2005 Huirong Yan, 5th year student, 5 papers published, 5 reviews
Fellowship at CITA since 2005
Sept. 2000 - 2005 Alejandro Esquivel, 3 papers published, 2 papers submitted, 1 review
Fellow at UNAM since 2005
June-August 2004 Sam Leitner, REU undergraduate student 1 paper submitted
Sept. 2004 - present Andrey Beresnyak, 2nd year student, 2 papers published, 1 paper submitted, 1 review
Oct. 2004 - June 2005 Shusaku Horibe, undergraduate student, 1 paper submitted
Aug. 2005 - present Hoang Thiem, visiting student, 1 paper in preparation

Grants:

PI at NSF AST -0307869 "Fundamentals of Interstellar Turbulence"
CoPI at NSF AST "Turbulence and Particles Acceleration in Solar Flares"
CoI at NSF AST -0243156 "Diffraction-limited Polarimetry at the Caltech Submillimeter Observatory"
PI at HST Cycle 12 (theory) "Magnetized Mixing Layers"
CoI at NSF AST-0098597 "Circumstellar Magnetic Field Diagnostics from Polarization of Line Scattering"
PI at NSF AST-0125544 "Collaborative proposal: Fast Dynamos in the Computer and the Galaxy"
CoI at Australian Research Council Grant "Interstellar Physics at the Epoch of Galaxy Formation"
Member of "Center for Magnetic Self-Organization in Laboratory and Astrophysical Plasmas"
Member of the *GLIMPSE SIRTIF* Team
Member of the *GALFA* Team

Awards/Fellowships: Vilas Professorship Award, 2005

Visiting Professor, Nice Observatory: September 2004
Visiting Professor, Stanford/NASA-Ames (one month): June-July 2004
Visiting Professor, Cologne (two months): January-February 2004
Visiting Professor, Ecole Normale Superier (one month): June 2003
Visiting Professor, Stanford (one month): July 2002
Visiting Professor, Sao-Paolo (one month): March 2001
Visiting Professor, Caltech (one and half month): June-July 2000
Visiting Fellowship at CfA, Harvard Univ.: May-July 1995
The Isaac Newton Scholarship at Cambridge Univ.: 1991-1994
Cambridge Overseas Trust Award: 1991-1994
Soros Foundation Visiting Scholarship (Award to the winner of an
All-Soviet Union Competition of Young Scientists): 1990-1991
The Best Young Inventor Prize, 1988
The Honored Inventor, USSR, 1987
The Best Inventor of Moscow Institute of Physics and Technology (MIPT), 1987
Winner of "Technology is the Vehicle of Progress" TV contest, 1986

Editing and Service:

1989 - 1991 Editor of the Physics & Technology Section of

1987 - 1990 the Russian popular science magazine “Quantum” ;
 Reporter to Russian popular science magazines “Nature” and
 “Inventor and Rationalizer”

2005 Co-Editor, *Magnetic Fields in the Universe*, AIP

November 2004 Co-Chair, *Magnetic Fields in the Universe*, Angra dos Reis, Brazil
 July 2002 Chair, Sci. Org. Committee, Ringberg “Astro-Plasmaphysics” Workshop
 Review panels Serve regularly at NASA and NSF Review Panel
 refereeing around 10 papers per year (ApJ, A&A, MNRAS, Phys. Rev., Phys. of Plasmas)

Miscellaneous:

Refereed for Wiley Encyclopedia
 Member of SOC of Astronomy meetings

Some colloquia within last 4 years:

Harvard University, Caltech (*), Univ. of Wisconsin-Madison (*), Univ. of Toronto
 Univ. of Texas (Austin), Princeton Univ., Univ. of Illinois, NCAR-Boulder,
 Yale University, CITA (*), Bartol Research Institute, Columbia University,
 Rutgers Univ., College de France, Inst. of Atomic and Molecular Physics (Harvard),
 CfA, Univ. of California-Berkeley (*), NASA-Ames, Univ. of Arizona (*), Univ. of Turin
 UCLA, Northwestern University (*), Univ. of Minnesota (*), Univ. of Virginia
 JPL, Univ. of Rochester, Ecole Normale (*), Univ. of British Columbia, Naval Observato
 Paris Observatory (*), Nice Observatory, IAS-Paris
 Goddard Space Center, McMaster Univ. (Canada), Univ. of New York
 Tufts University, UNAM (Mexico), Univ. of Massachusetts-Amherst, Green Bank
 Stanford, ITP and Phys. Dept. at Santa-Barbara (*), Queens University, Kyoto Universi
 Johns Hopkins Univ., Bochum Univ. (Germany) (*), Univ. of Koln (Germany)(*)

The symbol (*) defines places where more than one colloquium was given.

Recent Invited Talks at Conferences:

July 2006 *Aspen Workshop on Magnetic Self-Organization*, Aspen, USA
 June 2006 *18th International Conference on Spectral Line Shapes*, Auburn, USA
 June 2006 *9th Electromagnetic and Light Scattering Conference*, St. Petersburg, Russia
 May 2006 *Small Ionized and Neutral Structures in Diffuse Interstellar Medium*, Socorro, USA
 April 2006 *European Geoscience Union Assembly*, Vienna, Austria
 March 2006 *Harry Petschek Symposium on Magnetic Reconnection*, College Park, USA
 September 2005 *The Origin and Evolution of Cosmic Magnetism*, Bologna, Italy
 May 2005 *Nonlinear Cosmology: Turbulence and Fields*, Trieste, Italy
 March 2005 *Astrophysical Reconnection and Particle Acceleration*, Awaji-shima island, Japan
 November 2004 *Magnetic Fields in the Universe*, Angra dos Reis, Brazil
 September 2004 *Plasma Processes in Galaxies and in Clusters of Galaxies*, Cracow, Poland
 August 2004 *Diffuse Matter in the Galaxy: Observations Confront Theory*, Arecibo, Puerto Rico
 August 2004 *Cosmic Rays and Magnetic Fields in Large Scale Structure*, Pusan, Korea
 July 2004 *Plasma Physics School*, Trieste, Italy
 June 2004 *Penetrating Bars through Masks of Cosmic Dust*, South Afrika
 March 2004 *Polarimetry Symposium*, Hawaii, USA
 December 2003 *Numerical Methods and Astrophysical Turbulence*, Taipei, Taiwan
 September 2003 *Dense Interstellar Medium in Galaxies*, Zermatt, Switzerland
 May 2003 *Astrophysics of Dust*, Colorado , USA
 April 2003 *Magnetic Fields and Star Formation*, Madrid , Spain
 March 2003 *CMB Polarization Workshop*, Minneapolis, USA
 February 2003 *IGPP Second International Astrophysics Conference*, Palm Springs, USA

November 2002	<i>44th Annual Meeting of the Division of Plasma Physics</i> , Orlando, USA
September 2002	<i>Galactic Dynamics Workshop and JENAM 2002</i> , Porto, Portugal
August 2002	<i>Beaming and Jets in Gamma Ray Bursts</i> , Copenhagen, Denmark
June 2002	<i>Ringberg Workshop on Astrophysics</i> , Ringberg, Germany
March 2002	<i>New Frontiers in CMB Physics</i> , Paris, France
March 2002	<i>6th International Conference on Light Scattering</i> , Gainesville, USA
Oct. 2001	<i>CMB Polarization</i> , Bologna, Italy
July 2001	<i>Simulations of MHD turbulence</i> , Paris, France
Aug. 2000	<i>IAU General Assembly</i> , Manchester, England
Nov. 1999	<i>Cosmic Evolution and Galaxy Formation</i> , Puebla, Mexico
Sept. 1999	<i>Plasma Turbulence and Energetic Particles</i> , Cracow, Poland
July 1999	<i>SOFIA and Star Formation</i> , Santa Cruz, USA
Nov. 1998	<i>The Sloan Summit on Microwave Foregrounds</i> , Princeton, USA (two talks)
Oct. 1998	<i>13th Kingston Meeting</i> , Hamilton, Canada
Aug. 1998	<i>New Perspectives on the Interstellar Medium</i> , Naramata, Canada
Jan. 1998	<i>Interstellar Turbulence</i> , Puebla, Mexico

Additional information about my research can be obtained from my friends and colleagues:

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Main Publications

1. Lazarian A. & Beresnyak, A. 2006, Cosmic Ray Scattering by Compressible Turbulence, *MNRAS*, in press
2. Lazarian, A. & Pogosyan, D. 2006, Studying Turbulence using Doppler-broadened Lines: Velocity Coordinate Spectrum, *ApJ*, in press
3. Yan, H. & Lazarian, A. 2006, Polarization of Absorption Lines as a Diagnostics of Interstellar and Inter-galactic Magnetic Fields: Fine Structure Atoms, *ApJ*, in press
4. Esquivel, A., Benjamin R., Lazarian, A., Cho, J., & Leitner, S. 2006, MHD Turbulent Mixing Layers: Equilibrium Cooling Models, *ApJ*, in press
5. Lazarian A. 2006, Enhancement and Suppression of Heat Transfer by MHD Turbulence, *ApJL*, 645, L25-L28
6. Beresnyak, A. & Lazarian, A. 2006, Polarization Intermittency in MHD and its Influence on MHD Turbulent Cascade, *ApJL*, 640, L175-L178
7. Petrosian, V., Yan, H., & Lazarian, A. 2006, Damping of MHD Turbulence in Solar Flares, *ApJ*, 644, 603-612
8. Ossenkopf, V., Esquivel, A., Lazarian, A., & Stutzki, J. 2006, Interstellar Cloud Structure: The Statistics of Centroids of Velocities, *A& A*, **452**, 223-236
9. Suzuki, T., Yan, H., Lazarian, A., & Cassinelli, J. 2006, Collisionless Damping of Fast MHD Waves in Magneto-rotational Winds, *ApJ*, 640, 1005-1017
10. Cho, J. & Lazarian, A. 2006, Particle Acceleration by MHD Turbulence, *ApJ*, **638**, 811-826
11. Cho, J., & Lazarian, A. 2006, Grain Alignment by Radiation in Dark Clouds and Cores, *ApJ*, **631**, 361-370
12. Esquivel, A., & Lazarian, A. 2005, Velocity Centroids as Tracers of the Turbulent Velocity, *ApJ*, **631**, 320-350
13. de Gouveia Dal Pino, E. & Lazarian, A. 2005, A simple model for the superluminal ejecta of GRS 1915+105 by violent magnetic reconnection, *A& A*, **441**, 845-853
14. Beresnyak, A., Lazarian, A., & Cho, J. 2005, Density Scaling and Anisotropy in Supersonic Magnetohydrodynamic Turbulence, *ApJ*, **624**, L93-L96
15. Pohl, M., Yan, H., & Lazarian, A. 2005, Magnetically Limited X-Ray Filaments in Young SNR, *ApJL*, **626**, 101-103
16. Cho, J. & Lazarian, A. 2005, Generation of Compressible Modes in Magnetohydrodynamic Turbulence, *Theor. and Comput. Fluid Dynamics*, **19**, 127-157
17. Shalchi, A., Yan, H., Lazarian, A. 2005, Spurious contribution to cosmic ray scattering calculations, *MNRAS*, **356**, 1064-1070
18. Lazarian, A. 2004, Turbulence Statistics from Spectral Line Observations, *JKAS*, **37**, 563-570
19. Lazarian, A. & Pogosyan D. 2004, Velocity Modification of the Power Spectrum of an Absorbing Medium, *ApJ*, **616**, 943-965
20. Yan, H., Lazarian, A., & Draine, B. 2004, Grain Dynamics in Magnetized Compressible Interstellar Medium, *ApJ*, **616**, 895-911
21. Cho, J. & Lazarian, A. 2004, The Anisotropy of Electron MHD Turbulence, *ApJ*, **615**, L41-L44
22. Yan, H. & Lazarian, A. 2004, Cosmic Rays Scattering and Streaming in Compressible Magnetohydrodynamic Turbulence, *ApJ*, **614**, 757-769
23. Lazarian, A., Vishniac, E., & Cho, J. 2004, Magnetic Field Structure and Stochastic Reconnection in a Partially Ionized Gas, *ApJ*, 603, 180-197
24. Cho, J. & Lazarian, A. 2003, Compressible Magnetohydrodynamic Turbulence: mode coupling, scaling relations, anisotropy, new regime and astrophysical implications, *MNRAS*, **345**, 325-339
25. Cho, J., Lazarian, A., & Vishniac, E. 2003, Ordinary and Viscosity-Damped MHD Turbulence, *ApJ*, **595**, 812-823
26. Lazarian, A. & Esquivel, A. 2003, Statistics of Velocity from Spectral Data: Modified Velocity Centroids, *ApJ*, **592**, L37-L40

27. Yan, H. & Lazarian, A. 2003, Grain Acceleration by MHD Turbulence: Gyroresonance Mechanism, *ApJ*, **592**, L33-L37
28. Groves, B., Cho, J., Dopita, M. & Lazarian, A. 2003, The Radio-FIR correlation: Is MHD Turbulence the Cause?, *Publ. of Astronomical Soc. of Australia*, **20**, issue 3, 252-256
29. Esquivel, A., Lazarian, A., Pogosyan, D., & Cho, J. 2003, Velocity statistics from spectral line data: effects of density-velocity correlations, magnetic field, and shear, *MNRAS*, **342**, 325
30. Cho, J., Lazarian, A., Honein, A., Knaepen, B., Kassinos, S., & Moin, P. 2003, Thermal Conduction in Magnetized Turbulent Gas, *ApJ*, **589**, L77-L80
31. Cho, J., & Lazarian, A. 2003, Compressible MHD Turbulence: Mode Coupling, Anisotropies and Scalings, *Revista Mexicana de Astronomia y Astrofisica*, **15**, 293-298
32. Lazarian, A. 2003, Magnetic Fields from Polarimetry: Progress of Grain Alignment Theory, *Journal of Quantitative Spectroscopy and Radiative Transfer*, **79-80**, 881-902
33. Yan, H. & Lazarian, A. 2002, Scattering of Cosmic Rays by Magnetohydrodynamic Turbulence, *Phys. Rev. Lett.*, **89**, number 28, 1102-(1-4)
34. Cho, J. & Lazarian, A. 2002, Compressible Sub-Alfvénic Turbulence in Low- β Plasmas, *Phys. Rev. Lett.*, **88**, number 24, 5001-(1-4)
35. Cho, J., Lazarian, A. 2002, Magnetohydrodynamic Turbulence as a Foreground for Cosmic Microwave Background Studies, *ApJ*, **575**, L63-L66
36. Lazarian, A., & Yan, H. 2002 Grain Dynamics in Magnetized Interstellar Gas, *ApJ*, **566**, L105-L108
37. Cho, J., Lazarian, A., Vishniac, E. 2002 New Regime of MHD Turbulence: Cascade Below Viscous Cutoff, *ApJ*, **566**, L49-L52
38. Cho, J., Lazarian, A., & Vishniac, E. 2002, Simulations of MHD Turbulence in a Strongly Magnetized Medium, *ApJ*, **564**, pgs 291-301
39. Fosalba, P., Lazarian, A., Tauber, J., & Prunet, S. 2002 Statistical Properties of Galactic Starlight Polarization, *ApJ*, **564**, pgs 262-272
40. de Gouveia Dal Pino, E., & Lazarian, A. 2001, Constraints on Ultra-High-Energy Cosmic Ray Acceleration in Accretion-Induced Collapse Pulsars, *ApJ*, **560**, pgs 358-364
41. Lazarian, A., & Pogosyan, D., Vazquez-Semadeni, E., Pichardo, B. 2001, Emissivity Statistics in Turbulent Compressible Magnetohydrodynamic Flows and the Density-Velocity Correlation, *ApJ*, **555**, pgs 130-138
42. Stanimirovic, S., & Lazarian, A. 2001, Velocity and Density Spectra of the Small Magellanic Cloud, *ApJ*, **551**, pgs L53-L56
43. Lazarian, A., & Pogosyan, D. 2000, Velocity Modification of HI Power Spectrum, *ApJ*, **537**, pgs 720-748
44. Lazarian, A. & Draine, B.T. 2000, Resonance Paramagnetic Relaxation and Alignment of Small Grains, *ApJL*, **536**, pgs 15-18
45. de Gouveia Dal Pino, E. & Lazarian, A. 2000, Ultra-high-Energy Cosmic-Ray Acceleration by Magnetic Reconnection in Newborn Accretion-Induced Collapse Pulsars, *ApJ*, **536**, pgs L31-L34
46. Efrimsky, M., Lazarian, A. 2000, Inelastic Relaxation in Tumbling Asteroids and Comets, *MNRAS*, **311**, pgs 269-278
47. Lazarian, A. & Draine, B. 1999, Nuclear internal relaxation within interstellar grains, *ApJL*, **520**, pgs 67-70
48. Lazarian, A., & Draine, B. 1999, Thermal Flipping and Thermal Trapping- New Elements of Dust Grain Dynamics, *ApJL*, **516**, pgs 37-40
49. Lazarian, A., & Vishniac, E., 1999, Reconnection in Weakly Stochastic Field, *ApJ*, **517**, pgs 700-718
50. Lazarian, A., & Efrimsky, M., 1999, Inelastic Relaxation in a Rotating Body. Application to Cosmic Dust, *MNRAS*, **303**, pgs 673-685
51. Roberge, W., & Lazarian, A. 1999, Davis-Greenstein Alignment of Oblate Spheroidal Grains, *MNRAS*, **305**, pgs 615-630
52. Draine, B., & Lazarian, A. 1999, Magnetic Dipole Microwave Emission from Dust Grains, *ApJ*, **512**, pgs 740-759

53. Vishniac, E., & Lazarian, A. 1998, *ApJ*, Reconnection in ISM, **511**, pgs 193-203
54. Myers, P., & Lazarian, A. 1998, Turbulent Cooling Flows in Molecular Clouds, *ApJL*, **507**, L157-L160
55. Draine, B., & Lazarian, A. 1998, Electric Dipole Radiation from Spinning Dust Grains *ApJ*, **508**, pgs 157-179
56. Draine, B., & Lazarian, A. 1998, Diffuse Galactic Emission from Spinning Dust Grains *ApJL*, **494**, L19-L22
57. Lazarian, A., & Pogosyan, D. 1997, Interstellar Filaments and the Statistics of Galactic HI, *ApJ*, **491**, pgs 200-209
58. Lazarian, A., Goodman, A., & Myers, P. 1997, Grain Alignment in Dark Clouds, *ApJ*, **490**, pgs 273-280
59. Lazarian, A. & Draine, B. 1997, Disorientation of Suprathermally Rotating Grains and the Grain Alignment Problem, *ApJ*, **487**, pgs 248-258
60. Lazarian, A., & Roberge, W. 1997, Internal Relaxation in Thermally-Rotating Oblate Grains, *ApJ* **484**, pgs 230-237
61. Lazarian, A., & Roberge, W. 1997, Cosmic Rays and Grain Alignment, *MNRAS*, **287**, pgs 941-946
62. Lazarian, A. 1997, Paramagnetic Alignment of Thermally-Rotating Grains, *MNRAS*, **288**, pgs 609-617
63. Lazarian, A. 1997, Gold Alignment & Internal dissipation, *ApJ*, **483**, pgs 296-308
64. Lazarian, A., Efrimsky, M., & Ozik, J. 1996, Mechanical Alignment of Prolate Cosmic-Dust Grains. Cross-Section Alignment, *ApJ*, **472**, pgs 240-244
65. Chrysostomou, A., Hough, J. H., Whittet, D.C.B, Aitken, D.K., Roche, P.F., & Lazarian, A. 1996, Interstellar Polarization from CO and XCN Mantled Grains: A Severe Test for Grain Alignment Mechanisms, *ApJ*, **465**, pgs L61-L64
66. Scalo, J., & Lazarian, A. 1996, Occlusion Effects and the Distribution of Interstellar Cloud Sizes and Masses, *ApJ*, **469**, pgs 189-193
67. Lazarian, A., & Efrimsky, M. 1996, Cross-Section Alignment of Oblate Grains, *ApJ*, **466**, pgs 274-281
68. Lazarian, A. 1995, Alignment of Suprathermally Rotating Grains, *MNRAS*, **277**, pgs 1235-1242
69. Gerakines, P.A., Whittet, D.C.B., & Lazarian, A. 1995, Grain Alignment in the Taurus Dark Cloud, *ApJ*, **455**, pgs L171-175
70. Lazarian, A. 1995, Davis - Greenstein Alignment of Non-Spherical Grains, *ApJ*, **453**, pgs 229-237
71. Lazarian, A. 1995, Mechanical Alignment of Suprathermally Rotating Grains, *ApJ*, **451**, pgs 660-674
72. Lazarian, A. 1995, Physics and Chemistry of the Purcell's Alignment, *MNRAS*, **274**, pgs 679-688
73. Lazarian, A. 1995, Paramagnetic Alignment of Fractal Grains, *Astronomy and Astrophysics*, **293**, pgs 859-870
74. Lazarian, A. 1995, Study of HI Using Radiointerferometers, *Astronomy and Astrophysics*, **293**, pgs 507-520
75. Lazarian, A. 1994, Hierarchical Galactic Dynamo and Seed Field Magnetic Field Problem, *Astrophysics and Space Science*, 1994, **216**, pgs 207-208
76. Lazarian, A. 1994, A Statistical Description of Astrophysical Turbulence, *Astrophysics and Space Science*, 1994, **216**, pgs 219-228
77. Lazarian, A. 1994, Alfvén Waves and Alignment of Large Grains, *Astrophysics and Space Science*, **216**, pgs 235-237
78. Lazarian, A. 1994, The Inverse Problem for the Refractometry Diagnostics of Electromagnetic Turbulence *Plasma Physics and Controlled Fusion*, **36**, pgs 1013-1025
79. Lazarian, A. 1994, Gold-type Mechanism of Grain Alignment, *MNRAS*, **268**, pgs 713-721
80. Efrimsky M., & Lazarian, A. 1993, What is Observable in the Perturbative Approach to General Relativity, *Classical and Quantum Gravity*, **10**, pgs 2723-2727
81. Lazarian, A. 1993, Filamentary structure of the ISM at High Galactic Latitudes, *Astrophysics and Space Science*, **206**, pgs 37-51
82. Lazarian, A. 1993, Experimental Study of 3D Turbulence by Solving an Inverse Problem *Applied Scientific Research. An International Journal of Mechanical and Thermal Continua*, **51**, pgs 191-195

83. Lazarian, A. 1992, Diffusion-Generated Electromotive Force and Seed Magnetic Field Problem, *Astronomy and Astrophysics*, **264**, pgs 326-330
84. Lazarian, A., & Chibisov G.V., 1991, Determining of the Size of the Halo from Fluctuations in Diffuse Radio Emission *Sov. Astron. Lett.*, 1991, **17**(3), pgs 208-210
85. Lazarian, A., & Shutenkov V.R. 1990, Correlation Functions for a Random Galactic Magnetic Field *Sov. Astron. Lett.*, **16**(4), Jul.-Aug. 1990, pgs 297-300

Submitted Papers

86. Cho, J. & Lazarian, A. Grain Alignment and Polarized Emission from Magnetized T Tauri disks, *ApJ*
87. Yan, H. & Lazarian, A. Polarization of Spectral Lines as a Diagnostics of Astrophysical Magnetic Fields: Hyperfine Structure Lines, *ApJ*
88. Bethel, T., Chepurnov, A., Lazarian, A., & Kim, J. Emission Polarization from Turbulent Clouds, *ApJ*
89. Kowal, G. Lazarian, A., & Beresnyak, A. Density Fluctuations in MHD turbulence: spectra, intermittency and topology, *ApJ*
90. Suzuki, T., Lazarian, A., & Beresnyak, A. Cascading of Fast-Mode Balanced and Imbalanced Turbulence, *ApJ*
91. Hall, N., Kowal, G., Lazarian, A., Cho, J. A Comparative Study of Velocity Statistics of Hydrodynamic and Magnetohydrodynamic Turbulence, *Physics of Fluids*

Reviews

92. Lazarian, A. 2006, Turbulence spectra from Doppler-Shifted Spectral Lines, AIP, 15 pages, in press
93. Lazarian, A. 2006, Intermittency of Magnetohydrodynamic Turbulence: Astrophysical Perspective, IJMPD, Vol. 15, No. 6, 1-13
94. Lazarian, A. 2006, Theoretical Approaches to Particle Propagation and Acceleration in Turbulent Intergalactic Medium, *Astronomische Nachrichten*, proceedings of "The Origin and Evolution of Cosmic Magnetism", 327, issue 5/6, 605-610
95. Lazarian, A. 2005, Astrophysical Implications of Turbulent Reconnection: from Cosmic Rays to Star Formation, in *Magnetic Fields in Universe*, AIPC, 784, 42-54
96. Lazarian, A. & Cho, J. 2005, Grain Alignment in Molecular Clouds, ASP, in *Astrophysical Polarimetry*, V.343, 333-344
97. Lazarian, A. 2005, Polarization of Microwave Emission from Dust, IAU Symposium 201, 'New Cosmological Data and the Values of the Cosmological Parameters', eds. A.N. Lasenby and A. Wilkinson, ASP, p.105-116
98. Lazarian, A., & Yan, H. 2005, Statistics of Turbulence via Polarimetry: Alingment of Grains and Atoms, in *Magnetic Fields in Universe*, AIPC, 784, 495-506
99. Lazarian, A., & Beresnyak, A. 2005, MHD Turbulence: Properties of Alfven, Slow, Fast Modes and Density Scaling, in *Magneized Plasma in Galaxy Evolution*, eds, K.T. Chyzy, K. Otminowska-Mazur, M. Soida, and R.-J. Dettmar, Jagiellonian University, 56-65
100. Pogosyan, D. & Lazarian, A. 2005, Spectral Properties of Interstellar Turbulence via Velocity Channel Analysis, in *Magnetic Fields in Universe*, AIPC, 784, 287-495
101. Lazarian, A., & Cho, J. 2005, Scaling, Intermittency and Decay of MHD Turbulence, *Physica Scripta*, T116, 32-37
102. Cho, J., & Lazarian, A. 2004, Thermal Conduction in Magnetized Turbulent Gas, *JKAS*, 37, 557-562
103. Lazarian, A. 2004, Obtaining Statistics of Turbulent Velocity from Astrophysical Spectral Line Data, (12 pages), in *Penetrating Bars Through Masks of Cosmic Dust*,
104. Lazarian, A. 2004, Grain Alignment in Molecular Clouds, in *Dense Interstellar Medium in Galaxies*, eds, S. Pflazner, C. Kramer, C. Staubmeier, A. Heithausen, Springer, 369-376 astro-ph/0311371

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195. Lazarian, A. SU 975388 Gripping jaw for fragile components
196. Lazarian, A. SU 1044879 Valve for toxic materials
197. Lazarian, A. SU 1060476 Gripping jaw for fragile components
198. Lazarian, A. SU 1106921 Peristaltic pump
199. Lazarian, A. SU 1134362 Manipulator grip
200. Lazarian, A. SU 1151451 Manipulator grip
201. Lazarian, A. SU 1179087 Thermo-regulating device
202. Lazarian, A. SU 1206082 Manipulator grip
203. Lazarian, A. SU 1211031 Manipulator grip
204. Lazarian, A. SU 1212119 Valve for toxic materials (classified)²
205. Lazarian, A. SU 1214408 Gripping jaw for fragile components

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²The inventions which were considered of strategic importance were classified.

206. Lazarian, A. SU 1229035 Manipulator grip
207. Lazarian, A. SU 1229425 Peristaltic pump
208. Lazarian, A. SU 1245751 Peristaltic pump
209. Mamontov, I.V., & Lazarian, A. SU 1282420 Method of producing metallic powder (classified)
210. Lazarian, A. SU 1284827 Grip for fragile components
211. Lazarian, A. & Korniyushenko, G.V. SU 1290422 Magnetic memory device
212. Lazarian, A. SU 1298072 Gripping jaw for fragile components
213. Kulik, V.P., Novikov, V.K., & Lazarian, A. SU 1316683 Device for galvanic therapy
214. Lazarian, A. & Rogov V.A. SU 1330873 Device for laser cutting (classified)
215. Mamaev, V.K. & Lazarian, A. SU 1353751 Aerator
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223. Kitaev, M.A., & Lazarian, A. SU 1439853 Method of producing metallic powder (classified)
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227. Mamaev, V.K., & Lazarian, A. SU 1465309 Manipulator grip
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245. Melikov, E.N., & Lazarian, A. SU 1798181 Manipulator grip
246. Melikov, E.N., & Lazarian, A. SU 1799685 Device for blast forging of metallic powder
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