# Dmitri Ryutov

## List of Publications by Year in descending order



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|---|---|---|---|
| 52 papers | 2,537 citations | 279798 23 h-index | 189892 50 g-index |
| 52 all docs | 52 docs citations | 52 times ranked | 1808 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | The physics of fastZpinches. Reviews of Modern Physics, 2000, 72, 167-223. | 45.6 | 556 |
| 2 | Observation of magnetic field generation via the Weibel instability in interpenetrating plasma flows. Nature Physics, 2015, 11, 173-176. | 16.7 | 236 |
| 3 | Criteria for Scaled Laboratory Simulations of Astrophysical MHD Phenomena. Astrophysical Journal, Supplement Series, 2000, 127, 465-468. | 7.7 | 184 |
| 4 | Magnetohydrodynamic scaling: From astrophysics to the laboratory. Physics of Plasmas, 2001, 8, 1804-1816. | 1.9 | 178 |
| 5 | Generation of scaled protogalactic seed magnetic fields in laser-produced shock waves. Nature, 2012, 481, 480-483. | 27.8 | 113 |
| 6 | Experiments on radiative collapse in laser-produced plasmas relevant to astrophysical jets. Physical Review E, 2000, 62, 8838-8841. | 2.1 | 98 |
| 7 | Invited Article: Relation between electric and magnetic field structures and their proton-beam images. Review of Scientific Instruments, 2012, 83, 101301. | 1.3 | 89 |
| 8 | Using plasma physics to weigh the photon. Plasma Physics and Controlled Fusion, 2007, 49, B429-B438. | 2.1 | 78 |
| 9 | The magnetic field structure of a snowflake divertor. Physics of Plasmas, 2008, 15, . | 1.9 | 78 |
| 10 | Current and potential distribution in a divertor with toroidally-asymmetric biasing of the divertor plate. Plasma Physics and Controlled Fusion, 2007, 49, 1-13. | 2.1 | 66 |
| 11 | Scaling astrophysical phenomena to high-energy-density laboratory experiments. Plasma Physics and Controlled Fusion, 2002, 44, B407-B423. | 2.1 | 64 |
| 12 | Electron acceleration in laboratory-produced turbulent collisionless shocks. Nature Physics, 2020, 16, 916-920. | 16.7 | 60 |
| 13 | Collisionless shock experiments with lasers and observation of Weibel instabilities. Physics of Plasmas, 2015, 22, . | 1.9 | 51 |
| 14 | Magneto-hydrodynamically stable axisymmetric mirrors. Physics of Plasmas, 2011, 18, . | 1.9 | 45 |
| 15 | Instability Driven by Sheath Boundary Conditions and Limited to Divertor Legs. Contributions To Plasma Physics, 2004, 44, 168-175. | 1.1 | 42 |
| 16 | The role of finite photon mass in magnetohydrodynamics of space plasmas. Plasma Physics and Controlled Fusion, 1997, 39, A73-A82. | 2.1 | 41 |
| 17 | Visualizing electromagnetic fields in laser-produced counter-streaming plasma experiments for collisionless shock laboratory astrophysics. Physics of Plasmas, 2013, 20, . | 1.9 | 36 |
| 18 | Structure and Dynamics of Colliding Plasma Jets. Physical Review Letters, 2013, 111, 235003. | 7.8 | 35 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Basic scalings for collisionless-shock experiments in a plasma without pre-imposed magnetic field. Plasma Physics and Controlled Fusion, 2012, 54, 105021. | 2.1 | 33 |
| 20 | Magnetic field advection in two interpenetrating plasma streams. Physics of Plasmas, 2013, 20, . | 1.9 | 32 |
| 21 | The dynamics of an isolated plasma filament at the edge of a toroidal device. Physics of Plasmas, 2006, 13, 122307. | 1.9 | 29 |
| 22 | On the possibility of inducing strong plasma convection in the divertor of MAST. Plasma Physics and Controlled Fusion, 2001, 43, 1399-1423. | 2.1 | 28 |
| 23 | Simulating the magnetized liner inertial fusion plasma confinement with smaller-scale experiments. Physics of Plasmas, 2012, 19, . | 1.9 | 26 |
| 24 | Scaling laws for dynamical plasma phenomena. Physics of Plasmas, 2018, 25, . | 1.9 | 24 |
| 25 | Dynamics of an Isolated Blob in the Presence of the X-Point. Contributions To Plasma Physics, 2006, 46, 678-684. | 1.1 | 20 |
| 26 | Collisional effects in the ion Weibel instability for two counter-propagating plasma streams. Physics of Plasmas, 2014, 21, . | 1.9 | 20 |
| 27 | Time-resolved turbulent dynamo in a laser plasma. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, . | 7.1 | 20 |
| 28 | A â€œperfectâ€•hydrodynamic similarity and effect of the Reynolds number on the global scale motion. Physics of Plasmas, 2003, 10, 2629-2632. | 1.9 | 19 |
| 29 | Using intense lasers to simulate aspects of accretion discs andÂoutflows in astrophysics. Astrophysics and Space Science, 2011, 336, 21-26. | 1.4 | 19 |
| 30 | Intra-jet shocks in two counter-streaming, weakly collisional plasma jets. Physics of Plasmas, 2012, 19, . | 1.9 | 19 |
| 31 | Geometrical Effects in Plasma Stability and Dynamics of Coherent Structures in the Divertor. Contributions To Plasma Physics, 2008, 48, 48-57. | 1.1 | 16 |
| 32 | Two Models of Magnetic Support for Photoevaporated Molecular Clouds. Astrophysics and Space Science, 2005, 298, 183-190. | 1.4 | 15 |
| 33 | Similarity laws for collisionless interaction of superstrong electromagnetic fields with a plasma. Plasma Physics and Controlled Fusion, 2006, 48, L23-L31. | 2.1 | 15 |
| 34 | Axisymmetric Mirror as a Driver for a Fusionâ€“Fission Hybrid: Physics Issues. Journal of Fusion Energy, 2010, 29, 548-552. | 1.2 | 15 |
| 35 | Accelerating Shock Waves in a Laserâ€produced Density Gradient. Astrophysical Journal, Supplement Series, 2000, 127, 503-508. | 7.7 | 14 |
| 36 | Destabilizing effect of thermal conductivity on the Rayleighâ€“Taylor instability in a plasma. Physics of Plasmas, 2000, 7, 4797-4800. | 1.9 | 14 |

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|---|---|---|---|
| 37 | A Neutron Star Atmosphere in the Laboratory With Petawatt Lasers. Astrophysics and Space Science, 2005, 298, 293-298. | 1.4 | 14 |
| 38 | Plasma Liner with an Intermediate Heavy Shell and Thermal Pressure Drive. Fusion Science and Technology, 2006, 49, 39-55. | 1.1 | 14 |
| 39 | Kinetic effects on neutron generation in moderately collisional interpenetrating plasma flows. Physics of Plasmas, 2019, 26, . | 1.9 | 12 |
| 40 | Discrete symmetries in axisymmetric toroidal plasma confinement. Physics of Plasmas, 2001, 8, 1451-1454. | 1.9 | 10 |
| 41 | Axisymmetric Magnetic Mirror Fusion-Fission Hybrid. Fusion Science and Technology, 2012, 61, 206-215. | 1.1 | 9 |
| 42 | A Hypothetical Effect of the Maxwellâ€“Proca Electromagnetic Stresses on Galaxy Rotation Curves. Astrophysical Journal, 2019, 871, 218. | 4.5 | 9 |
| 43 | Scaling Laws for Collisionless Laserâ€“Plasma Interactions of Relevance to Laboratory Astrophysics. Astrophysics and Space Science, 2007, 307, 291-296. | 1.4 | 8 |
| 44 | Adiabatic Compression of a Dense Plasma â€œMixedâ€•with Random Magnetic Fields. Fusion Science and Technology, 2009, 56, 1489-1494. | 1.1 | 8 |
| 45 | On the possibility of the sheath-driven, finite-beta modes localized near the divertor plate. Plasma Physics and Controlled Fusion, 2005, 47, 1187-1206. | 2.1 | 7 |
| 46 | Eagle Nebula: the Problem of Missing Stiffness and the Hypothesis of Magnetostatic Turbulence. AIP Conference Proceedings, 2004, , . | 0.4 | 5 |
| 47 | On the Virial Theorem for Interstellar Medium. Astrophysical Journal, 2008, 674, 976-983. | 4.5 | 4 |
| 48 | Collisional and collisionless shocks. Plasma Physics and Controlled Fusion, 2019, 61, 014034. | 2.1 | 4 |
| 49 | Solving the Stand-off Problem for Magnetized Target Fusion: Plasma Streams as Disposable Electrodes, Together with a Local Spherical Blanket. Journal of Fusion Energy, 2007, 26, 173-177. | 1.2 | 3 |
| 50 | Using the Rayleigh-Taylor instability forÂin situ measurements ofÂthermal conductivity ofÂwarm dense matter. Astrophysics and Space Science, 2009, 322, 141-146. | 1.4 | 1 |
| 51 | A simple model of a strong shock driven by a spherical or cylindrical piston. Physics of Plasmas, 2021, 28, . | 1.9 | 1 |
| 52 | Axisymmetric Magnetic Mirror Applications â€“ Divertor Test Stand to Fusion Power Plant. Fusion Science and Technology, 2012, 61, 70-76. | 1.1 | 0 |