William Dorland

Curriculum Vitae

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ACADEMIC POSITIONS

7/09 – present	Professor, UMD, Dept of Physics and IREAP
3/10 – present	Visiting Professor of Theoretical Physics, University of Oxford
7/09 – 6/13	Visiting Professor of Physics, Imperial College, London
1/09 – 12/15	Director, UMD, Honors College
7/08 – 12/08	Director, UMD, IREAP
7/05 – 6/09	Assoc Professor, UMD, Dept of Physics and IREAP
7/05 – 7/08	Assoc Professor, UMD, Ctr for Sci Computation and Mathematical Modeling
9/03 – 6/09	Visiting Reader, Department of Physics, Imperial College, London
9/02 – 7/05	Assistant Professor, UMD, Dept of Physics, IREAP, and CSCAMM
9/01 – 8/02	Reader, Department of Physics, Imperial College, London
1/98 – 8/01	Associate Research Scientist, UMD, IREAP
2/96 – 12/07	Associate Research Scientist, University of Texas, Inst for Fusion Studies

EDUCATION

9/1993 – 2/1996	DOE Fusion Postdoctoral Fellow, University of Texas, IFS
9/1988 – 9/1993	Princeton University, PhD in Astrophysical Sciences, Program in Plasma Physics
9/1988 – 5/1993	Princeton University, MPA, Woodrow Wilson School of Public and Intl Affairs
8/1984 – 5/1988	University of Texas, BS in Physics

INTERESTS

I am primarily interested in computational plasma physics, with applications to problems in magnetic confinement fusion, astrophysical plasmas, and the solar wind. I have authored and co-authored a handful of widely-used, first-principles, gyrokinetic codes. I helped to identify and develop models for key features of turbulence in laboratory experiments. I've also worked on adiabatic quantum computing theory. For seven years, I ran the University of Maryland's Honors College, the university's program for academically talented undergraduates. Since 2001, I have developed and taught physics courses at all levels, for majors and non-majors. From 2002 to 2008, I developed and taught a course in scientific computation for graduate students in a wide range of majors.

HONORS and AWARDS

2017	UMD Honors College Outstanding Faculty Award
2013	UMD Merrill Presidential Faculty
2010	UMD Distinguished Scholar Teacher
2009	E. O. Lawrence Award
2008	Richard A. Ferrell Distinguished Faculty Fellow
2005	Fellow, American Physical Society
2000	CIEE Special Award for Creative Ideas in International Education
1998	Outstanding Young Texas-Ex
1988	University of Texas College of Natural Sciences, Highest Honors
1988	University of Texas Department of Physics, Special Honors
1988	Phi Beta Kappa

SELECTED COLLOQUIA and INVITED TALKS

2019	Pauli Colloquium, Wolfgang Pauli Institute, Vienna: “Waves in Active, Turbulent Media”
2019	Niels Bohr Intl Academy, Copenhagen: “Fluidization in Collisionless Plasma Turbulence”
2017	US-Japan Wksp, Multiscale Plasma Physics: “Gyrokinetic Dynamic Fidelity Refinement”
2015	Solar Heliospheric and Interplanetary Environment: “Turbulent Heating in the Solar Wind”
2009	Oxford University Physics Colloq: “Shear-flow Driven Instabilities in Transport Barriers”
2009	PPPL Colloquium: “Magnetized Plasma Turbulence in the Laboratory and in Nature”
1994	IAEA FEC, “Comparisons of Nonlinear Toroidal Turbulence Simulations with Experiment”

SELECTED PROFESSIONAL ACTIVITIES

Editor	Journal of Plasma Physics, Cambridge University Press (2013 – 2023)
Chair	PPPL High Performance Computing Review (2019)
Co-organizer	US-Japan Joint Institute of Fusion Theory Workshop, Inuyama, Japan (2019)
Chair	Program Committee, Sherwood Fusion Theory Conference (2018 – 2019)
Co-Chair	DOE OFES Quantum Information Science Panel (2018)
Co-Chair	Frontiers of Plasma Physics Conference (2016 – 2017)
Chair	National Research Council Plasma Science Committee (2014 – 2018)
Member	PPPL Advisory Board (2009 – 2012)
Member	National Academy of Sciences Plasma 2010 Committee (2005 – 2007)
Member	APS Panel on Public Affairs (2005 – 2007); Chair, Nat Sec Committee (2007)
Director	Maryland Center for Multiscale Plasma Dynamics (2004 – 2009)
Director	Workshop on Theoretical Plasma Physics, Abdus Salam ICTP, Trieste (2004)
Chair	APS Division of Plasma Physics Public Information Committee (2003 – 2005)
Member	NSTX Program Advisory Committee (2000 – 2004)
Member	Transport Task Force Executive Committee (1998 – 2006)
Chair	APS Committee for the International Freedom of Scientists (1997 – 1998)
Member	ITER Working Group on Confinement (1995 – 1997)

SELECTED CAMPUS SERVICE ACTIVITIES

Member	Senate (2018 – 2020)
Member	Senate Executive Committee (2019 – 2020)
Director	Department of Physics Honors Program (2019 – present)

GENERAL SOFTWARE

Over a period of years, I wrote and maintained the software which was used to manage several major undergraduate admissions processes at the University of Maryland, including general fall undergraduate admissions, living/learning program assignments, and the Banneker/Key scholarship selection and recruitment events.

REFEREED SCIENTIFIC PAPERS

1. E. J. Paul, I. G. Abel, M. Landreman, W. Dorland, (2019). “An adjoint method for neoclassical stellarator optimization”, JPP*,* 85 (5).

2. J. Bringewatt, W. Dorland, S. P. Jordan, (2019). “Polynomial time algorithms for estimating spectra of adiabatic Hamiltonians”, Phys Rev A, 100 (3).

3. J. R. Harrison, *et al.,* (2019). “Overview of new MAST physics in anticipation of first results from MAST Upgrade”, NF, 59 (11).

4. R. Meyrand, A. Kanekar, W. Dorland, A. A. Schekochihin, (2019) “Fluidization of collisionless plasma turbulence”, PNAS, 116 (4).

5. J. Bringewatt, W. Dorland, S. P. Jordan, A. Mink, (2018). “Diffusion Monte Carlo approach versus adiabatic computation for local Hamiltonians”, Phys Rev A, 97 (2).

6. E. J. Paul, M. Landreman, A. Bader, W. Dorland, (2018). “An adjoint method for gradient-based optimization of stellarator coil shapes”, NF 58 (7).

7. M. F. Martin, M. Landreman, P. Xanthopolous, N. R. Mandell, W. Dorland, (2018). “The parallel boundary condition for turbulence simulations in low magnetic shear device”, PPCF 60 (9).

8. M. Barnes, P. Abiuso, W. Dorland, (2018). “Turbulent heating in an inhomogeneous magnetized plasma slab”, JPP 84 (3).

9. E. G. Highcock, N. R. Mandell, M. Barnes, W. Dorland, (2018). “Optimisation of confinement in a fusion reactor using a nonlinear turbulence model”, JPP 84 (2).

10. N. R. Mandell, W. Dorland, M. Landreman (2018). “Laguerre-Hermite pseudo-spectral velocity formulation of gyrokinetics”, JPP 84 (1).

11. J. Juno, A. Hakim, J. TenBarge, E. Shi, W. Dorland (2018). “Discontinuous Galerkin algorithms for fully kinetic plasmas”, JCP 353.

12. F. van Wyk, E. G. Highcock, A. R. Field, C. M. Roach, A. A. Schekochihin, F. I. Parra, W. Dorland (2017). “Ion-scale turbulence in MAST: Anomalous transport, subcritical transitions, and comparisons to BES measurements”, PPCF 59 (11).

13. E. J. Paul, M. Landreman, F. M. Poli, D. A. Spong, H. M. Smith, W. Dorland (2017). “Rotation and neoclassical ripple transport in ITER”, NF 57 (11).

14. A. Kirk, *et al.,* (2017). “Overview of recent physics results from MAST”, NF 57 (10).

15. G. J. Wilkie, I. Pusztai, I. G. Abel, W. Dorland, T. Fülöp, (2017). “Global anomalous transport of ICRH-and NBI-heated fast ions”, PPCF 59 (4).

16. N. F. Loureiro, W. Dorland, L. Fazendeiro, A. Kanekar, A. Mallet, M. S. Vilelas, A. Zocco, (2016). “Viriato: A Fourier–Hermite spectral code for strongly magnetized fluid–kinetic plasma dynamics”, CPC 206.

17. G. J. Wilkie, I. G. Abel, M. Landreman, W. Dorland, (2016). “Transport and deceleration of fusion products in microturbulence”, PoP 23 (6).

18. G. J. Wilkie, W. Dorland, (2016). “Fundamental form of the electrostatic delta-f PIC algorithm and discovery of a converged numerical instability”, PoP 23 (5).

19. A. A. Schekochihin, J. T. Parker, E. G. Highcock, P. J. Dellar, W. Dorland, G. W. Hammett, (2016). “Phase mixing versus nonlinear advection in drift-kinetic plasma turbulence”, JPP 82 (2).

20. G. J. Colyer, A. A. Schekochihin, F. I. Parra, C. M. Roach, M. Barnes, Y.-c. Ghim, W. Dorland, (2016). “Collisionality scaling of the electron heat flux in ETG turbulence”, PPCF 59 (5).

21. G. Merlo, *et al.,* (2016). “Linear multispecies gyrokinetic flux tube benchmarks in shaped tokamak plasmas”, PoP 23 (3).

22. F. van Wyk, E. Highcock, A. A. Shekochihin, C. M. Roach, A. R. Field, W. Dorland, (2016). “Transition to subcritical turbulence in a tokamak plasma”, JPP 82 (2).

23. I. T. Chapman, *et al.,* (2015). “Overview of MAST results”, NF 55 (10).

24. G. J. Wilkie, I. G. Abel, E. G. Highcock, W. Dorland, (2015). “Validating modeling assumptions of alpha particles in electrostatic turbulence”, JPP 81 (3).

25. M. Landreman, T. M. Antonsen, Jr., W. Dorland, (2015). “Universal instability for wavelengths below the ion Larmor scale”, PRL 114 (9).

26. M. Landreman, G. G. Plunk, W. Dorland, (2015). “Generalized universal instability: transient linear amplification and subcritical turbulence”, JPP 81 (1).

27. A. Kanekar, A. A. Schekochihin, W. Dorland, N. F. Loureiro, (2015). “Fluctuation-dissipation relations for a plasma-kinetic Langevin equation”, JPP 81 (1).

28. J. Ball, F. I. Parra, M. Barnes, W. Dorland, G. W. Hammett, P. Rodrigues, N. F. Loureiro, (2014). “Intrinsic momentum transport in up–down asymmetric tokamaks”, PPCF 56 (9).

29. J. M. TenBarge, G. G. Howes, W. Dorland, G. W. Hammett, (2014). “An oscillating Langevin antenna for driving plasma turbulence simulations”, CPC 185 (2).

30. J. M. TenBarge, W. Daughton, H. Karimabadi, G. G. Howes, W. Dorland, (2014). “Collisionless reconnection in the large guide field regime: Gyrokinetic versus particle-in-cell simulations”, PoP 21 (2).

31. I. G. Abel, G. G. Plunk, E. Wang, M. Barnes, S. C. Cowley, W. Dorland, A. A. Schekochihin, (2013). “Multiscale gyrokinetics for rotating tokamak plasmas: fluctuations, transport and energy flows”, RPP 76 (11).

32. J. M. TenBarge, G. G. Howes, W. Dorland, (2013). “Collisionless damping at electron scales in solar wind turbulence”, ApJ 774 (2).

33. S. A. Sabbagh, *et al.,* (2013). “Overview of physics results from the conclusive operation of the National Spherical Torus Experiment”, NF 53 (10).

34. K. D. Nielson, G. G. Howes, W. Dorland, (2013). “Alfvén wave collisions, the fundamental building block of plasma turbulence. II. Numerical solution”, PoP 20 (7).

35. E. G. Highcock, A. A. Schekochihin, S. C. Cowley, M. Barnes, F. I. Parra, C. M. Roach, W. Dorland, (2012). “Zero-Turbulence Manifold in a Toroidal Plasma”, PRL 109 (26).

36. T. Tatsuno, G. G. Plunk, M. Barnes, W. Dorland, G. G. Howes, R. Numata, (2012). “Freely decaying turbulence in two-dimensional electrostatic gyrokinetics”, PoP 19 (12).

37. M. Barnes, F. I. Parra, W. Dorland, (2012). “Turbulent Transport and Heating of Trace Heavy Ions in Hot Magnetized Plasmas”, PRL 109 (18).

38. G. G. Plunk, T. Tatsuno, W. Dorland, (2012). “Considering fluctuation energy as a measure of gyrokinetic turbulence”, NJP 14.

39. J. A. Baumgaertel, E. A. Belli, W. Dorland, W. Guttenfelder, G. W. Hammett, D. R. Mikkelsen, G. Rewoldt, W. M. Tang, P. Xanthopolous, (2011). “Simulating gyrokinetic microinstabilities in stellarator geometry with GS2”, PoP 18 (12).

40. R. Numata, W. Dorland, G. G. Howes, N. F. Loureiro, B. N. Rogers, T. Tatsuno, (2011). “Gyrokinetic simulations of the tearing instability”, PoP 18 (11).

41. G. G. Howes, J. M. TenBarge, W. Dorland, (2011). “A weakened cascade model for turbulence in astrophysical plasmas”, PoP 18 (10).

42. G. G. Howes, J. M. TenBarge, W. Dorland, E. Quataert, A. A. Schekochihin, R. Numata, T. Tatsuno, (2011). “Gyrokinetic simulations of solar wind turbulence from ion to electron scales”, PRL 107 (3).

43. R. Raman, *et al.,* (2011). “Overview of physics results from NSTX”, NF 51 (9).

44. R. Numata, G. G. Howes, T. Tatsuno, M. Barnes, W. Dorland, (2010). “AstroGK: Astrophysical gyrokinetics code”, JCP 229 (24).

45. S. Kobayashi, B. N. Rogers, W. Dorland, (2010). “Particle pinch in gyrokinetic simulations of closed field-line systems”, PRL 105 (23).

46. N. Joiner, A. Hirose, W. Dorland, (2010). “Parallel magnetic field perturbations in gyrokinetic simulations”, PoP 17 (7).

47. P. Ricci, B. N. Rogers, W. Dorland, (2010). “Collisional damping of zonal flows due to finite Larmor radius effects”, PoP 17 (7).

48. N. Joiner, W. Dorland, (2010). “Ion temperature gradient driven transport in tokamaks with square shaping”, PoP 17 (6).

49. M. Barnes, I. G. Abel, W. Dorland, T. Goerler, G. W. Hammett, F. Jenko, (2010). “Direct multiscale coupling of a transport code to gyrokinetic turbulence codes”, PoP 17 (5).

50. M. Barnes, W. Dorland, T. Tatsuno, (2010). “Resolving velocity space dynamics in continuum gyrokinetics”, PoP 17 (3).

51. K. Nielson, G. G. Howes, T. Tatsuno, R. Numata, W. Dorland, (2010). “Numerical modeling of Large Plasma Device Alfven wave experiments using AstroGK”, PoP 17 (2).

52. C. M. Roach, *et al.,* (2009). “Gyrokinetic simulations of spherical tokamaks”, PPCF 51 (12).

53. D. A. Gates, *et al.,* (2009). “Overview of results from the National Spherical Torus Experiment (NSTX)”, NF 49 (10).

54. Y. K. M. Peng, *et al.,* (2009). “Remote handling and palsma conditions to enable fusion nuclear science R&D using a component testing facility”, FST 56 (2).

55. S. Kobayashi, B. N. Rogers, W. Dorland, (2009). “Gyrokinetic simulations of turbulent transport in a ring dipole plasma”, PRL 103 (5).

56. B. D. G. Chandran, E. Quataert, G. G. Howes, J. Hollweg, W. Dorland, (2009), “The turbulent heating rate in strong magnetohydrodynamic turbulence with nonzero cross helicity”, ApJ 701 (1).

57. M. Barnes, I. G. Abel, W. Dorland, D. Ernst, G. W. Hammett, P. Ricci, B. N. Rogers, A. A. Schekochihin, T. Tatsuno, (2009). “Linearized model Fokker-Planck collision operators for gyrokinetic simulations. II. Numerical implementation and tests”, PoP 16 (7).

58. T. Tatsuno, W. Dorland, A. A. Schekochihin, G. G. Plunk, M. Barnes, S. C. Cowley, G. G. Howes, (2009). “Nonlinear phase mixing and phase-space cascade of entropy in gyrokinetic plasma turbulence”, PRL 103 (1).

59. D. R. Ernst, J. Lang, W. M. Nevins, M. Hoffman, Y. Chen, W. Dorland, S. Parker, (2009). “Role of zonal flows in trapped electron mode turbulence through nonlinear gyrokinetic particle and continuum simulation”, PoP 16 (5).

60. A. A. Schekochihin, S. C. Cowley, W. Dorland, G. W. Hammett, G. G. Howes, E. Quataert, T. Tatsuno, (2009). “Astrophysical gyrokinetics: Kinetic and fluid turbulent cascades in magnetized weakly collisional plasmas”, ApJ Supp 182 (1).

61. D. R. Hatch, P. W. Terry, W. M. Nevins, W. Dorland, (2009). “Role of stable eigenmodes in gyrokinetic models of ion temperature gradient turbulence”, PoP 16 (2).

62. G. Stantchev, D. Juba, W. Dorland, A. Varshney, (2009). “Using graphics processors for high-performance computation and visualization of plasma turbulence”, CSE 11 (2).

63. P. Xanthopoulos, D. Mikkelsen, F. Jenko, W. Dorland, O. Kalentev, (2008). “Verification and application of numerically generated magnetic coordinate systems in gyrokinetics”, PoP 15 (12).

64. I. G. Abel, M. Barnes, S. C. Cowley, W. Dorland, A. A. Schekochihin, (2008). “Linearized model Fokker-Planck collision operators for gyrokinetic simulations. I. Theory”, PoP 15 (12).

65. W. Guttenfelder, J. Jore, D. T. Anderson, F. S. B. Anderson, J. M. Canik, W. Dorland, K. M. Likin, J. N. Talmadge, (2008). “Effect of Quasihelical Symmetry on Trapped-Electron Mode Transport in the HSX Stellarator”, PRL 101 (21).

66. A. A. Schekochihin, S. C. Cowley, W. Dorland, G. W. Hammett, G. G. Howes, G. G. Plunk, E. Quataert, T. Tatsuno, (2008). “Gyrokinetic turbulence: a nonlinear route to dissipation through phase space”, PPCF 50 (12).

67. K. Gustafson, D. del Castillo-Negrete, W. Dorland, (2008). “Finite Larmor radius effects on nondiffusive tracer transport in a zonal flow”, PoP 15 (10).

68. G. Stantchev, W. Dorland, N. Gumerov, (2008). “Fast parallel particle-to-grid interpolation for plasma PIC simulations on the GPU”, JPDC 68 (10).

69. D. R. Mikkelsen, W. Dorland, (2008). “Dimits shift in realistic gyrokinetic plasma-turbulence simulations”, PRL 101 (13).

70. E. A. Belli, G. W. Hammett, W. Dorland, (2008). “Effects of plasma shaping on nonlinear gyrokinetic turbulence”, PoP 15 (9).

71. T. Tatsuno, W. Dorland, (2008). “Secondary tearing mode in the nonlinear evolution of magnetorotational instability”, Astronomische Nachrichten, 329 (7).

72. G. Stantchev, D. Juba, W. Dorland, A. Varshney, (2008). “Confluent volumetric visualization of gyrokinetic turbulence”, IEEE TPS 36 (4).

73. G. G. Howes, S. C. Cowley, W. Dorland, G. W. Hammett, E. Quataert, A. A. Schekochihin, (2008). “A model of turbulence in magnetized plasmas: Implications for the dissipation range in the solar wind”, JGR-Space Physics 113 (A5).

74. G. G. Howes, S. C. Cowley, W. Dorland, G. W. Hammett, E. Quataert, A. A. Schekochihin, T. Tastuno, (2008). “Kinetic simulations of magnetized turbulence in astrophysical plasmas”, PRL 100 (6).

75. G. G. Howes, S. C. Cowley, W. Dorland, G. W. Hammett, E. Quataert, A. A. Schekochihin, T. Tastuno, (2008). “Comment on ‘Kinetic simulations of magnetized turbulence in astrophysical plasmas’ - Reply”, PRL 101 (14).

76. B. N. Rogers, S. Kobayashi, P. Ricci, W. Dorland, J. F. Drake, T. Tatsuno, (2007). “Gyrokinetic simulations of collisionless magnetic reconnection”, PoP 14 (9).

77. M. Shay, J. F. Drake, W. Dorland, (2007). “Equation-free projective integration: A multiscale method applied to a plasma ion acoustic wave”, JCP 226 (1).

78. W. M. Nevins, S. E. Parker, Y. Chen, J. Candy, A. Dimits, W. Dorland, G. W. Hammett, F. Jenko, (2007). “Verification of gyrokinetic delta-f simulations of electron temperature gradient turbulence”, PoP 14 (8).

79. A. M. Dimits, *et al.,* (2007). “Gyrokinetic simulations of ETG and ITG turbulence”, NF 47 (8).

80. D. J. Applegate, C. M. Roach, J. W. Connor, S. C. Cowley, W. Dorland, J. Hastie, N. Joiner, (2007). “Microtearing modes in the mega-ampere spherical tokamak”, PPCF 49 (8).

81. Y. Xiao, P. J. Catto, W. Dorland, (2007), “Effects of finite poloidal gyroradius, shaping, and collisions on the zonal flow residual”, PoP 14 (5).

82. A. A. Schekochihin, S. C. Cowley, W. Dorland, (2007). “Interplanetary and interstellar plasma turbulence”, PPCF 49 (5A).

83. W. M. Nevins, J. Candy, S. C. Cowley, T. Dannert, A. Dimits, W. Dorland, C. Estrada-Mila, G. W. Hammett, F. Jenko, M. J. Pueschel, D. E. Shumaker, (2006). “Characterizing electron temperature gradient turbulence via numerical simulation”, PoP 13 (12).

84. P. Ricci, B. N. Rogers, W. Dorland, (2006). “Small-scale turbulence in a closed-field-line geometry”. PRL 97 (24).

85. G. G. Howes, S. C. Cowley, W. Dorland, G. W. Hammett, E. Quataert, A. A. Schekochihin, (2006). “Astrophysical gyrokinetics: Basic equations and linear theory”, ApJ 651 (1).

86. D. Stutman, *et al.,* (2006). “Studies of improved electron confinement in low density L-mode NSTX discharges”, PoP 13 (9).

87. T. Tatsuno, W. Dorland, (2006). “A shear-flow instability related to advanced tokamak operation”, Plasma and Fusion Research 1, p. 15.

88. T. Tatsuno, W. Dorland, (2006). “Magneto-flow instability in symmetric field profiles”, PoP 13 (9).

89. P. Ricci, B. N. Rogers, W. Dorland, M. Barnes, (2006). “Gyrokinetic linear theory of the entropy mode in a Z-pinch”, PoP 13 (6).

90. N. Joiner, D. Applegate, S. C. Cowley, W. Dorland, C. M. Roach, (2006). “Electron temperature gradient driven transport in a MAST H-mode plasma”, PPCF 48 (5).

91. A. I. D. Macnab, G. Vahala, L. Vahala, J. Carter, M. Soe, W. Dorland, (2006). “Non-local closure and parallel performance of lattice Boltzmann models for some plasma physics problems”, Physica A: Stat Mech and Applications 362 (1).

92. W. M. Nevins, G. W. Hammett, A. M. Dimits, W. Dorland, D. E. Shumaker, (2005). “Discrete particle noise in particle-in-cell simulations of plasma microturbulence”, PoP 12 (12).

93. N. F. Loureiro, S. C. Cowley, W. Dorland, M. G. Haines, A. A. Schekochihin, (2005), “X-point collapse and saturation in the nonlinear tearing mode reconnection”, PRL 95 (23).

94. C. M. Roach, *et al.,* (2005). “Microstability physics as illuminated in the spherical tokamak”, PPCF 47 (12B).

95. K. Hallatschek, W. Dorland, (2005). “Giant electron tails and passing electron pinch effects in tokamak-core turbulence”, PRL 95 (5).

96. M. H. Redi, W. Dorland, C. L. Fiore, J. A. Baumgaertel, E. M. Belli, T. S. Hahm, G. W. Hammett, G. Rewoldt, (2005). “Microturbulent drift mode stability before internal transport barrier formation in the Alcator C-Mod radio frequency heated H-mode”, PoP 12 (7).

97. B. N. Rogers, W. Dorland, (2005). “Noncurvature-driven modes in a transport barrier”, PoP 12 (6).

98. D. J. Applegate, *et al.,* (2004). “Microstability in a ‘MAST-like’ high confinement mode spherical tokamak equilibrium”, PoP 11 (11).

99. D. R. Sisan, N. Mujica, W. A. Tillotson, Y. M. Huang, W. Dorland, A. B. Hassam, T. M. Antonsen, Jr., D. Lathrop, (2004). “Experimental observation and characterization of the magnetorotational instability”, PRL 93 (11).

100. R. G. Kleva, P. N. Guzdar, W. Dorland, (2004). “Edge transport and the low-to-high transition in tokamaks with D-shaped magnetic flux surfaces”, PoP 11 (9).

101. M. Romanelli, C. Bourdelle, W. Dorland, (2004). “Effects of high density peaking and high collisionality on the stabilization of the electrostatic turbulence in the Frascati Tokamak Upgrade”, PoP 11 (8).

102. H. R. Wilson, *et al.,* (2004). “Integrated plasma physics modelling for the Culham steady state spherical tokamak fusion power plant”, NF 44 (8).

103. D. R. Ernst, *et al.,* (2004). “Role of trapped electron mode turbulence in internal transport barrier control in the Alcator C-Mod Tokamak”, PoP 11 (5).

104. J. Candy, R. E. Waltz, W. Dorland, (2004). “The local limit of global gyrokinetic simulations”, PoP 11 (5).

105. C. Bourdelle, W. Dorland, X. Garbet, G. W. Hammett, M. Kotschenreuther, G. Rewoldt, E. J. Synakowski, (2003). “Stabilizing impact of high gradient of beta on microturbulence”, PoP 10 (7).

106. M. A. Shay, J. F. Drake, M. Swisdak, W. Dorland, B. N. Rogers, (2003). “Inherently three-dimensional magnetic reconnection: A mechanism for bursty bulk flows?”, GRL 30 (6).

107. T. S. Pedersen, A. H. Boozer, W. Dorland, J. P. Kremer, R. Schmitt, (2003). “Prospects for the creation of positron-electron plasmas in a non-neutral stellarator”, JP B:AMO 36 (5).

108. J. Pamela, E. R. Solano, *et al.,* (2003). “Overview of JET results”, NF 43 (12).

109. D. W. Ross, W. Dorland, (2002). “Comparing simulation of plasma turbulence with experiment. II. Gyrokinetic simulations”, PoP 9 (12).

110. D. W. Ross, R. B. Bravenec, W. Dorland, M. A. Beer, G. W. Hammett, G. R. McKee, R. J. Fonck, *et al.,* (2002), “Comparing simulation of plasma turbulence with experiment”, PoP 9 (1).

111. F. Jenko, W. Dorland, (2002) “Prediction of significant tokamak turbulence at electron gyroradius scales”, PRL 89 (22).

112. E. Quataert, W. Dorland, G. W. Hammett, (2002). “The magnetorotational instability in a collisionless plasma”, ApJ 577 (1).

113. R. V. Budny, *et al.,* (2002). “Microturbulence and flow shear in high-performance JET ITB plasma”, PPCF 44 (7).

114. E. J. Synakowski, *et al.,* (2002). “Initial studies of core and edge transport of NSTX plasmas”, PPCF 44 (5A).

115. F. Jenko, W. Dorland, (2001). “Nonlinear electromagnetic gyrokinetic simulations of tokamak plasmas”, PPCF 43 (12A).

116. I. H. Hutchinson, *et al.,* (2001). “Overview of recent Alcator C-Mod results”, NF 41 (10).

117. F. Jenko, W. Dorland, G. W. Hammett, (2001). “Critical gradient formula for toroidal electron temperature gradient modes”, PoP 8 (9).

118. F. Jenko, W. Dorland, M. Kotschenreuther, B. N. Rogers, (2000). “Electron temperature gradient driven turbulence”, PoP 7 (5).

119. B. N. Rogers, W. Dorland, M. Kotschenreuther, (2000). “Generation and stability of zonal flows in ion-temperature-gradient mode turbulence”, PRL 85 (25).

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