## References

- [1] http://plasmalab.pbworks.com.
- [2] D. B. Schaeffer, Everson E. T., Bondarenko A. S., S. E. Clark, C. G. Constantin, S. Vincena, B. Van Compernolle, S. K. P. Tripathi, D. Winkse, W. Gekelman, and C. Niemann. Laser-driven, magnetized quasi-perpendicular collisionless shocks on the Large Plasma Device. *Phys. Plasmas*, 21:056312, 2014.
- [3] C. Niemann, W. Gekelman, C. G. Constantin, E. T. Everson, D. B. Schaeffer, A. S. Bondarenko, S. E. Clark, D. Winske, S. Vincena, B. Van Compernolle, and P. Pribyl. Observation of collisionless shocks in a large current-free laboratory plasma. *Geophys. Res. Lett.*, 41(21):7413–7418, 2014.
- [4] S. E. Clark, E. T. Everson, D. B. Schaeffer, A. S. Bondarenko, C. G. Constantin, C. Niemann, and D. Winske. Enhanced collisionless shock formation in a magnetized plasma containing a density gradient. *Phys. Rev. E*, 90:041101, 2014.
- [5] R.M. Thorne. Radiation belt dynamics: The importance of wave-particle interactions. *Geophys. Res. Lett.*, 37(22):L22107, 2010.
- [6] G. D. Reeves, H. E. Spence, M. G. Henderson, S. K. Morley, R. H. W. Friedel, H. O. Funsten, D. N. Baker, S. G. Kanekal, J. B. Blake, J. F. Fennell, S. G. Claudepierre, R. M. Thorne, D. L. Turner, C. A. Kletzing, W. S. Kurth, B. A. Larsen, and J. T. Niehof. Electron acceleration in the heart of the Van Allen radiation belts. *Science*, 341(6149):991–994, 2013.
- [7] Richard B. Horne, Richard M. Thorne, Sarah A. Glauert, Jay M. Albert, Nigel P. Meredith, and Roger R. Anderson. Timescale for radiation belt electron acceleration by whistler mode chorus waves. *J. Geophys. Res.*, 110(A3):A03225, 2005.
- [8] R. M. Thorne, W. Li, B. Ni, Q. Ma, J. Bortnik, L. Chen, D. N. Baker, H. E. Spence, G. D. Reeves, M. G. Henderson, C. A. Kletzing, W. S. Kurth, G. B. Hospodarsky, J. B. Blake, J. F. Fennell, S. G. Claudepierre, and S. G. Kanekal. Rapid local acceleration of relativistic radiation-belt electrons by magnetospheric chorus. *Nature*, 504(7480):411–414, 2013.
- [9] B. Van Compernolle, J. Bortnik, P. Pribyl, W. Gekelman, M. Nakamoto, X. Tao, and R. M. Thorne. Direct detection of resonant electron pitch angle scattering by whistler waves in a laboratory plasma. *Phys. Rev. Lett.*, 112:145006, 2014.
- [10] B. Van Compernolle, X. An, J. Bortnik, R. M. Thorne, P. Pribyl, and W. Gekelman. Excitation of chirping whistler waves in a laboratory plasma. *Phys. Rev. Lett.*, 114:245002, 2015.
- [11] Y. Zhang, H. Boehmer, W. W. Heidbrink, R. McWilliams, D. Leneman, and S. Vincena. Lithium ion sources for investigations of fast ion transport in magnetized plasmas. *Rev. Sci. Inst.*, 78(1):013302, 2007.
- [12] S. K. P. Tripathi, P. Pribyl, and W. Gekelman. Development of a radio-frequency ion beam source for fast-ion studies on the Large Plasma Device. *Rev. Sci. Inst.*, 82(9):093501, 2011.
- [13] L. Zhao, W. W. Heidbrink, H. Boehmer, R. McWilliams, D. Leneman, and S. Vincena. Measurements of classical transport of fast ions. *Phys. Plasmas*, 12(5):052108, 2005.

- [14] Yang Zhang, W. W. Heidbrink, H. Boehmer, R. McWilliams, Guangye Chen, B. N. Breizman, S. Vincena, T. Carter, D. Leneman, W. Gekelman, P. Pribyl, and B. Brugman. Spectral gap of shear Alfvén waves in a periodic array of magnetic mirrors. *Phys. Plasmas*, 15(1):012103, 2008.
- [15] Y. Zhang, W. W. Heidbrink, H. Boehmer, R. McWilliams, S. Vincena, T. A. Carter, W. Gekelman, D. Leneman, and P. Pribyl. Observation of fast-ion Doppler-shifted cyclotron resonance with shear Alfvén waves. *Phys. Plasmas*, 15(10):102112, 2008.
- [16] Yang Zhang, W. W. Heidbrink, Shu Zhou, H. Boehmer, R. McWilliams, T. A. Carter, S. Vincena, and M. K. Lilley. Doppler-shifted cyclotron resonance of fast ions with circularly polarized shear Alfvén waves). *Phys. Plasmas*, 16(5):055706, 2009.
- [17] Shu Zhou, W. W. Heidbrink, H. Boehmer, R. McWilliams, T. Carter, S. Vincena, S. K. P. Tripathi, P. Popovich, B. Friedman, and F. Jenko. Turbulent transport of fast ions in the large plasma device. *Phys. Plasmas*, 17(9):092103, 2010.
- [18] S. Zhou, W. W. Heidbrink, H. Boehmer, R. McWilliams, T. A. Carter, S. Vincena, B. Friedman, and D. Schaffner. Sheared-flow induced confinement transition in a linear magnetized plasma. *Phys. Plasmas*, 19(1):012116, 2012.
- [19] Shu Zhou, W. W. Heidbrink, H. Boehmer, R. McWilliams, T. A. Carter, S. Vincena, S. K. P. Tripathi, and B. Van Compernolle. Thermal plasma and fast ion transport in electrostatic turbulence in the Large Plasma Device. *Phys. Plasmas*, 19(5):055904, 2012.
- [20] W. W. Heidbrink, H. Boehmer, R. McWilliams, A. Preiwisch, Y. Zhang, L. Zhao, S. Zhou, A. Bovet, A. Fasoli, I. Furno, K. Gustafson, P. Ricci, T. Carter, D. Leneman, S. K. P. Tripathi, and S. Vincena. Measurements of interactions between waves and energetic ions in basic plasma experiments. *Plasma Phys. Control. Fusion*, 54(12):124007, 2012.
- [21] T. A. Carter. Intermittent turbulence and turbulent structures in a linear magnetized plasma. *Phys. Plasmas*, 13:010701, 2006.
- [22] D. C. Pace, M. E. Austin, E. M. Bass, R. V. Budny, W. W. Heidbrink, J. C. Hillesheim, C. T. Holcomb, M. Gorelenkova, B. A. Grierson, D. C. McCune, G. R. McKee, C. M. Muscatello, J. M. Park, C. C. Petty, T. L. Rhodes, G. M. Staebler, T. Suzuki, M. A. Van Zeeland, R. E. Waltz, G. Wang, A. E. White, Z. Yan, X. Yuan, and Y. B. Zhu. Energetic ion transport by microturbulence is insignificant in tokamaks. *Phys. Plasmas*, 20(5):056108, 2013.
- [23] A. Bovet, I. Furno, A. Fasoli, K. Gustafson, and P. Ricci. Investigation of fast ion transport in TORPEX. *Nucl. Fusion*, 52(9):094017, 2012.
- [24] S.K.P. Tripathi, B. Van Compernolle, W. Gekelman, P. Pribyl, and W. Heidbrink. Excitation of shear Alfvén waves by a spiraling ion beam in a large magnetoplasma. *Phys. Rev. E*, 91(1):013109, 2015.
- [25] R. S. Iroshnikov. The turbulence of a conducting fluid in a strong magnetic field. *Astron. Zh.*, 40:742, 1963. English Translation: Sov. Astron., 7 566 (1964).
- [26] R. H. Kraichnan. Inertial range spectrum of hyromagnetic turbulence. *Phys. Fluids*, 8:1385–1387, 1965.

- [27] D. J. Thuecks, C. A. Kletzing, F. Skiff, S. R. Bounds, and S. Vincena. Tests of collision operators using laboratory measurements of shear Alfvén wave dispersion and damping. *Phys. Plasmas*, 16(5):052110, 2009.
- [28] C. A. Kletzing, D. J. Thuecks, F. Skiff, S. R. Bounds, and S. Vincena. Measurements of Inertial Limit Alfvén Wave Dispersion for Finite Perpendicular Wave Number. *Phys. Rev. Lett.*, 104(9):095001, 2010.
- [29] D. W. Auerbach, T. A. Carter, S. Vincena, and P. Popovich. Resonant drive and nonlinear suppression of gradient-driven instabilities via interaction with shear Alfvén waves. *Phys. Plasmas*, 18(5):055708, 2011.
- [30] G. G. Howes and K. D. Nielson. Alfvén wave collisions, the fundamental building block of plasma turbulence. I. Asymptotic solution. *Phys. Plasmas*, 20(7):072302, 2013.
- [31] K. D. Nielson, G. G. Howes, and W. Dorland. Alfvén wave collisions, the fundamental building block of plasma turbulence. II. Numerical solution. *Phys. Plasmas*, 20(7):072303, 2013.
- [32] G. G. Howes, K. D. Nielson, D. J. Drake, J. W. R. Schroeder, F. Skiff, C. A. Kletzing, and T. A. Carter. Alfvén wave collisions, the fundamental building block of plasma turbulence. III. Theory for experimental design. *Phys. Plasmas*, 20(7):072304, 2013.
- [33] G. G. Howes, D. J. Drake, K. D. Nielson, T. A. Carter, C. A. Kletzing, and F. Skiff. Toward Astrophysical Turbulence in the Laboratory. *Phys. Rev. Lett.*, 109(25):255001, 2012.
- [34] D. J. Drake, J. W. R. Schroeder, G. G. Howes, C. A. Kletzing, F. Skiff, T. A. Carter, and D. W. Auerbach. Alfvén wave collisions, the fundamental building block of plasma turbulence. IV. Laboratory experiment. *Phys. Plasmas*, 20(7):072901, 2013.
- [35] Yuhou Wang, Walter Gekelman, Patrick Pribyl, and Konstantinos Papadopoulos. Scattering of magnetic mirror trapped fast electrons by a shear Alfvén wave. *Phys. Rev. Lett.*, 108:105002, 2012.
- [36] Y. Wang, W. Gekelman, and P. Pribyl. Hard x-ray tomographic studies of the destruction of an energetic electron ring. *Rev. Sci. Inst.*, 84(5):053503, 2013.
- [37] Y. Wang, W. Gekelman, P. Pribyl, and K. Papadopoulos. Enhanced loss of magnetic-mirror-trapped fast electrons by a shear Alfvén wave. *Phys. Plasmas*, 21(5):055705, 2014.
- [38] O. A. Rosso, H. A. Larrondo, M. T. Martin, A. Plastino, and M. A. Fuentes. Distinguishing noise from chaos. *Phys. Rev. Lett.*, 99:154102, 2007.
- [39] Christoph Bandt and Bernd Pompe. Permutation entropy: A natural complexity measure for time series. *Phys. Rev. Lett.*, 88:174102, 2002.
- [40] D. C. Pace, M. Shi, J. E. Maggs, G. J. Morales, and T. A. Carter. Exponential frequency spectrum and Lorentzian pulses in magnetized plasmas. *Phys. Plasmas*, 15(12):122304, 2008.
- [41] J. E. Maggs and G. J. Morales. Exponential power spectra, deterministic chaos and Lorentzian pulses in plasma edge dynamics. *Plasma Phys. Control. Fusion*, 54(12):124041, 2012.
- [42] J. E. Maggs and G. J. Morales. Origin of Lorentzian pulses in deterministic chaos. *Phys. Rev. E*, 86:015401, 2012.

- [43] J. E. Maggs and G. J. Morales. Permutation entropy analysis of temperature fluctuations from a basic electron heat transport experiment. *Plasma Phys. Control. Fusion*, 55(8):085015, 2013.
- [44] J. E. Maggs, T. L. Rhodes, and G. J. Morales. Chaotic density fluctuations in L-mode plasmas of the DIII-D tokamak. *Plasma Phys. Control. Fusion*, 57(4):045004, 2015.
- [45] S. T. Vincena, G. J. Morales, and J. E. Maggs. Effect of two ion species on the propagation of shear Alfvén waves of small transverse scale. *Phys. Plasmas*, 17(5):052106, 2010.
- [46] S. T. Vincena, W. A. Farmer, J. E. Maggs, and G. J. Morales. Laboratory realization of an ion-ion hybrid Alfvén wave resonator. *Geophys. Res. Lett.*, 38(11):L11101, 2011.
- [47] W. A. Farmer and G. J. Morales. Cherenkov radiation of shear Alfvén waves in plasmas with two ion species. *Phys. Plasmas*, 19(9):092109, 2012.
- [48] S. T. Vincena, W. A. Farmer, J. E. Maggs, and G. J. Morales. Investigation of an ion-ion hybrid Alfvén wave resonator. *Phys. Plasmas*, 20(1):012111, 2013.
- [49] W. A. Farmer and G. J. Morales. Propagation of shear Alfvén waves in two-ion species plasmas confined by a nonuniform magnetic field. *Phys. Plasmas*, 20(8):082132, 2013.
- [50] W. A. Farmer and G. J. Morales. The ion-ion hybrid Alfvén resonator in a fusion environment. *Phys. Plasmas*, 21(6):062507, 2014.
- [51] Eric E. Lawrence and Walter Gekelman. Identification of a quasiseparatrix layer in a reconnecting laboratory magnetoplasma. *Phys. Rev. Lett.*, 103:105002, 2009.
- [52] W. Gekelman, E. Lawrence, A. Collette, S. Vincena, B. Van Compernolle, P. Pribyl, M. Berger, and J. Campbell. Magnetic field line reconnection in the current systems of flux ropes and Alfvén waves. *Physica Scripta*, 2010(T142):014032, 2010.
- [53] B. Van Compernolle, W. Gekelman, P. Pribyl, and C. M. Cooper. Wave and transport studies utilizing dense plasma filaments generated with a lanthanum hexaboride cathode. *Phys. Plasmas*, 18(12):123501, 2011.
- [54] J. E. Maggs and G. J. Morales. Laboratory realization of an Alfvén wave maser. *Phys. Rev. Lett.*, 91(3):035004, 2003.
- [55] J. E. Maggs, G. J. Morales, and T. A. Carter. An Alfvén wave maser in the laboratory. *Phys. Plasmas*, 12(1):013103, 2005.
- [56] Walter Gekelman, Bart Van Compernolle, Tim DeHaas, and Stephen Vincena. Chaos in magnetic flux ropes. *Plasma Phys. Control. Fusion*, 56(6):064002, 2014.
- [57] P. W. Terry. Suppression of turbulence and transport by sheared flow. *Rev. Mod. Phys.*, 72:109–165, 2000.
- [58] J. E. Maggs, T. A. Carter, and R. J. Taylor. Transition from bohm to classical diffusion due to edge rotation of a cylindrical plasma. *Phys. Plasmas*, 14:052507, 2007.
- [59] T. A. Carter and J. E. Maggs. Modifications of turbulence and turbulent transport associated with a bias-induced confinement transition in the large plasma device. *Phys. Plasmas*, 16:012304, 2009.

- [60] D. A. Schaffner, T. A. Carter, G. D. Rossi, D. S. Guice, J. E. Maggs, S. Vincena, and B. Friedman. Modification of turbulent transport with continuous variation of flow shear in the Large Plasma Device. *Phys. Rev. Lett.*, 109:135002, 2012.
- [61] D. A. Schaffner, T. A. Carter, G. D. Rossi, D. S. Guice, J. E. Maggs, S. Vincena, and B. Friedman. Turbulence and transport suppression scaling with flow shear on the Large Plasma Device. *Phys. Plasmas*, 20:055907, 2013.
- [62] G. M. Staebler, R. E. Waltz, J. Candy, and J. E. Kinsey. New paradigm for suppression of gyrokinetic turbulence by velocity shear. *Phys. Rev. Lett.*, 110:055003, Jan 2013.
- [63] P. Popovich, M. V. Umansky, T. A. Carter, and B. Friedman. Analysis of plasma instabilities and verification of bout code for linear plasma device. *Phys. Plasmas*, 17:102107, 2010.
- [64] P. Popovich, M. V. Umansky, T. A. Carter, and B. Friedman. Modeling of plasma turbulence and transport in the Large Plasma Device. *Phys. Plasmas*, 17:122312, 2010.
- [65] M. V. Umansky, P. Popovich, T. A. Carter, B. Friedman, and W. M. Nevins. Numerical simulation and analysis of plasma turbulence the Large Plasma Device. *Phys. Plasmas*, 18:055709, 2011.
- [66] B. Friedman, M. V. Umansky, and T. A. Carter. Grid convergence study in a simulation of LAPD turbulence. *Contrib. Plasma Phys.*, 52:412–416, 2012.
- [67] B. Friedman, T. A. Carter, M. V. Umansky, D. Schaffner, and B. Dudson. Energy dynamics in a simulation of LAPD turbulence. *Phys. Plasmas*, 19:102307, 2012.
- [68] B. Friedman, T. A. Carter, M. V. Umansky, D. Schaffner, and I. Joseph. Nonlinear instability in simulations of Large Plasma Device turbulence. *Phys. Plasmas*, 20:055704, 2013.
- [69] B. Friedman and T.A. Carter. Linear technique to understand non-normal turbulence applied to a magnetized plasma. *Phys. Rev. Lett.*, 113:025003, 2014.
- [70] B. Friedman and T.A. Carter. A non-modal analytical method to predict turbulent properties applied to the Hasegawa-Wakatani model. *Phys. Plasmas*, 22:012307, 2015.
- [71] J. F. Drake, A. Zeiler, and D. Biskamp. Nonlinear self-sustained drift-wave turbulence. *Phys. Rev. Lett.*, 75:4222, 1995.
- [72] D. Biskamp and A. Zeiler. Nonlinear instability mechanism in 3d collisional drift-wave turbulence. *Phys. Rev. Lett.*, 74:706, 1995.
- [73] B. D. Scott. Self-sustained collisional drift-wave turbulence in a sheared magnetic field. *Phys. Rev. Lett.*, 65:3289, 1990.
- [74] Akira Hasegawa and Liu Chen. Kinetic processes in plasma heating by resonant mode conversion of Alfvén wave. *Phys. Fluids*, 19(12):1924–1934, 1976.
- [75] Robert L. Lysak and William Lotko. On the kinetic dispersion relation for shear Alfvén waves. *J. Geophys. Res.*, 101(A3):5085–5094, 1996.
- [76] Aaron Barnes. Collisionless damping of hydromagnetic waves. *Phys. Fluids*, 9(8):1483–1495, 1966.

- [77] S. Peter Gary. The mirror and ion cyclotron anisotropy instabilities. *J. Geophys. Res.*, 97(A6):8519–8529, 1992.
- [78] S. Peter Gary, Hui Li, Sean O'Rourke, and Dan Winske. Proton resonant firehose instability: Temperature anisotropy and fluctuating field constraints. J. Geophys. Res., 103(A7):14567–14574, 1998.
- [79] Petr Hellinger, Pavel Trávníček, Justin C. Kasper, and Alan J. Lazarus. Solar wind proton temperature anisotropy: Linear theory and WIND/SWE observations. *Geophys. Res. Lett.*, 33(9):L09101, 2006.
- [80] S. D. Bale, J. C. Kasper, G. G. Howes, E. Quataert, C. Salem, and D. Sundkvist. Magnetic fluctuation power near proton temperature anisotropy instability thresholds in the solar wind. *Phys. Rev. Lett.*, 103:211101, 2009.
- [81] A. A. Schekochihin, S. C. Cowley, R. M. Kulsrud, M. S. Rosin, and T. Heinemann. Non-linear growth of firehose and mirror fluctuations in astrophysical plasmas. *Phys. Rev. Lett.*, 100:081301, 2008.
- [82] C. M. Cooper, W. Gekelman, P. Pribyl, and Z. Lucky. A new large area lanthanum hexaboride plasma source. *Rev. Sci. Inst.*, 81(8):083503, 2010.
- [83] B. Van Compernolle, G. J. Morales, J. E. Maggs, and R. D. Sydora. Laboratory study of avalanches in magnetized plasmas. *Phys. Rev. E*, 91:031102, 2015.
- [84] J.M. Finn, Z. Billey, W. Daughton, and E. Zweibel. Quasi-separatrix layer reconnection for nonlinear line-tied collisionless tearing modes. *Plasma Phys. Control. Fusion*, 56(6):064013, 2014.
- [85] W. Daughton, T.K.M. Nakamura, H. Karimabadi, V. Roytershteyn, and B. Loring. Computing the reconnection rate in turbulent kinetic layers by using electron mixing to identify topology. *Phys. Plasmas*, 21(5):052307, 2014.
- [86] Kevin J. Bowers, Brian J. Albright, Lin Yin, W. Daughton, Vadim Roytershteyn, B. Bergen, and T.J.T. Kwan. Advances in petascale kinetic plasma simulation with VPIC and Roadrunner. In *Journal of Physics: Conference Series*, volume 180, page 012055. IOP Publishing, 2009.
- [87] N.F. Loureiro, A.A. Schekochihin, and S.C. Cowley. Instability of current sheets and formation of plasmoid chains. *Phys. Plasmas*, 14(10):100703, 2007.
- [88] W. Daughton, V. Roytershteyn, B.J. Albright, H. Karimabadi, L. Yin, and Kevin J. Bowers. Transition from collisional to kinetic regimes in large-scale reconnection layers. *Phys. Rev. Lett.*, 103(6):065004, 2009.
- [89] F. Jenko and B. Scott. Numerical computation of collisionless drift Alfvén turbulence. *Phys. Plasmas*, 6:2705, 1999.
- [90] G.J. Morales, J.E. Maggs, A.T Burke, et al. Alfvénic turbulence associated with density and temperature filaments. *Plasma Phys. Control. Fusion*, 41:A519, 1999.
- [91] A.T. Burke, J.E. Maggs, and G.J. Morales. Spontaneous fluctuations of a temperature filament in a magnetized plasma. *Phys. Rev. Lett.*, 84:1451, 2000.

- [92] S. J. Zweben, C. R. Menyuk, and R. J. Taylor. Small-scale magnetic fluctuations inside the macrotor tokamak. *Phys. Rev. Lett.*, 42:1270, 1979.
- [93] F. Jenko and W. Dorland. Nonlinear electromagnetic gyrokinetic simulations of tokamak plasmas. *Plasma Phys. Control. Fusion*, 43:A141, 2001.
- [94] M. J. Pueschel, M. Kammerer, and F. Jenko. Gyrokinetic turbulence simulations at high plasma beta. *Phys. Plasmas*, 15:102310, 2008.
- [95] M. J. Pueschel and F. Jenko. Gyrokinetic turbulence simulations at high plasma beta. *Phys. Plasmas*, 17:062307, 2010.
- [96] V. Naulin. Electromagnetic transport components and sheared flows in drift-Alfvén turbulence. *Phys. Plasmas*, 10:4016, 2003.
- [97] V. Naulin, A. Kendl, O. E. Garcia, A. H. Nielsen, and J. J. Rasmussen. Shear flow generation and energetics in electromagnetic turbulence. *Phys. Plasmas*, 12:052515, 2005.
- [98] P.C. Liewer, J.M. McChesney, S.J. Zweben, and R.W. Gould. Temperature fluctuations and heat transport in the edge region of a tokamak. *Phys. Fluids*, 29:309, 1985.
- [99] M.R. Stoneking, S.A. Hokin, S.C. Prager, G. Fiksel, H. Ji, and D.J. den Hartog. Particle transport due to magnetic fluctuations. *Phys. Rev. Lett.*, 73:549, 1994.
- [100] Richard B. Horne, Richard M. Thorne, Sarah A. Glauert, Nigel P. Meredith, Dimitry Pokhotelov, and Ondřej Santolík. Electron acceleration in the Van Allen radiation belts by fast magnetosonic waves. *Geophys. Res. Lett.*, 34(17), 2007.
- [101] N. N. Gorelenkov, D. Stutman, K. Tritz, L. Boozer, A and Delgado-Aparicio, E. Fredrickson, S. Kaye, and R. White. Anomalous electron transport due to multiple high frequency beam ion driven Alfvén eigenmodes. *Nucl. Fusion*, 50(8):084012, 2010.
- [102] Erwin Frederick Jaeger, Lee A. Berry, Ed F. D'Azevedo, Richard F. Barrett, S. D. Ahern, David W. Swain, Donald B. Batchelor, R. W. Harvey, J. R. Myra, D. A. D'Ippolito, et al. Simulation of high-power electromagnetic wave heating in the ITER burning plasma. *Phys. Plasmas*, 15(7):072513, 2008.
- [103] Joseph V. Hollweg. Nonlinear Landau damping of Alfvén waves. *Phys. Rev. Lett.*, 27:1349–1352, 1971.
- [104] A. A. Schekochihin, S. C. Cowley, W. Dorland, G. W. Hammett, G. G. Howes, E. Quataert, and T. Tatsuno. Astrophysical gyrokinetics: Kinetic and fluid turbulent cascades in magnetized weakly collisional plasmas. *Ap. J. Supplement Series*, 182(1):310, 2009.
- [105] Stanislav Boldyrev, Konstantinos Horaites, Qian Xia, and Jean Carlos Perez. Toward a theory of astrophysical plasma turbulence at subproton scales. *Ap. J.*, 777(1):41, 2013.
- [106] S. Vincena, W. Gekelman, and J. Maggs. Shear Alfvén waves in a magnetic beach and the roles of electron and ion damping. *Phys. Plasmas*, 8:3884, 2001.
- [107] D. W. Auerbach, T. A. Carter, S. Vincena, and P. Popovich. Control of gradient-driven instabilities using shear Alfvén beat waves. *Phys. Rev. Lett.*, 105(13):135005, 2010.

- [108] S. Dorfman and T.A. Carter. Nonlinear excitation of acoustic modes by large-amplitude Alfvén waves in a laboratory plasma. *Phys. Rev. Lett.*, 110(19):195001, 2013.
- [109] S. Dorfman and T.A. Carter. Non-linear Alfvén wave interaction leading to resonant excitation of an acoustic mode in the laboratory. *Phys. Plasmas*, 22(5):055706, 2015.
- [110] S. D. Bale, P. J. Kellogg, F. S. Mozer, T. S. Horbury, and H. Reme. Measurement of the electric fluctuation spectrum of magnetohydrodynamic turbulence. *Phys. Rev. Lett.*, 94:215002, 2005.
- [111] O. Alexandrova, V. Carbone, P. Veltri, and L. Sorriso-Valvo. Small-scale energy cascade of the solar wind turbulence. *Ap. J.*, 674(2):1153, 2008.
- [112] J. W. Armstrong, B. J. Rickett, and S. R. Spangler. Electron density power spectrum in the local interstellar medium. *Ap. J.*, 443:209–221, 1995.
- [113] Steven A. Balbus and John F. Hawley. Instability, turbulence, and enhanced transport in accretion disks. *Rev. Mod. Phys.*, 70(1):1, 1998.
- [114] Kevin D. Nielson, Gregory G. Howes, Tomoya Tatsuno, Ryusuke Numata, and William Dorland. Numerical modeling of Large Plasma Device Alfvén wave experiments using AstroGK. *Phys. Plasmas*, 17(2):022105, 2010.
- [115] G. G. Howes, D. J. Drake, K. D. Nielson, T. A. Carter, C. A. Kletzing, and F. Skiff. Toward astrophysical turbulence in the laboratory. *Phys. Rev. Lett.*, 109(25):255001, 2012.
- [116] G. G. Howes, K. D. Nielson, D. J. Drake, J. W. R. Schroeder, F. Skiff, C. A. Kletzing, and T. A. Carter. Alfvén wave collisions, the fundamental building block of plasma turbulence. III. Theory for experimental design. *Phys. Plasmas*, 20(7):072304, 2013.
- [117] G.M. Wallace, A.E. Hubbard, P.T. Bonoli, I.C. Faust, R.W. Harvey, J.W. Hughes, B.L. LaBombard, O. Meneghini, R.R. Parker, A.E. Schmidt, et al. Lower hybrid current drive at high density in Alcator C-Mod. *Nucl. Fusion*, 51(8):083032, 2011.
- [118] Philippe Jacquet, L. Colas, M-L Mayoral, G. Arnoux, V. Bobkov, M. Brix, P. Coad, D. Czarnecka, A and Dodt, F. Durodie, et al. Heat loads on JET plasma facing components from ICRF and LH wave absorption in the SOL. *Nucl. Fusion*, 51(10):103018, 2011.
- [119] Stephen J. Wukitch, B. Lipschultz, E. Marmar, Y. Lin, A. Parisot, M. Reinke, J. Rice, J. Terry, and C-Mod Team. RF plasma edge interactions and their impact on ICRF antenna performance in Alcator C-Mod. *J. Nucl. Mat.*, 363:491–497, 2007.
- [120] Jon Christian Rost, Miklos Porkolab, and Réjean Louis Boivin. Edge ion heating and parametric decay during injection of ion cyclotron resonance frequency power on the Alcator C-Mod tokamak. *Phys. Plasmas*, 9(4):1262–1270, 2002.
- [121] R. Ochoukov, D.G. Whyte, D. Brunner, I. Cziegler, B. LaBombard, B. Lipschultz, J. Myra, J. Terry, and S. Wukitch. Investigation of RF-enhanced plasma potentials on Alcator C-Mod. *J. Nucl. Mat.*, 438:S875–S878, 2013.
- [122] D.A. D'Ippolito, J.R. Myra, R. Ochoukov, and D.G. Whyte. Modeling far-field radio-frequency sheaths in Alcator C-Mod. *Plasma Phys. Control. Fusion*, 55(8):085001, 2013.

- [123] Walter Gekelman, J. Wise, P. Pribyl, R. Baker, W. Layton, J. Skrzypek, P. Niknejadi, R. Ransom, D. Lee, R. Zarinshesnas, T. Kim, R. Buck, E. Warfel, T. Tasoff, J. Carmona, S. Skolnik, L. Kim, D. Furlong, and N. Gibson. Ion acoustic wave experiments in a high school plasma physics laboratory. *Am. J. Phys.*, 75(2):103–110, 2007.
- [124] W. Gekelman, P. Pribyl, J. Wise, A. Lee, R. Hwang, C. Eghtebas, J. Shin, and B. Baker. Using plasma experiments to illustrate a complex index of refraction. *Am. J. Phys.*, 79(9):894–902, 2011.
- [125] Walter Gekelman. LAPTAG-a physics outreach program at UCLA. APS News, 11(5), 2002.