

CURRICULUM VITAE

PETER H. YOON

Institute for Physical Science and Technology,
University of Maryland, College Park, Maryland 20742
Telephone: (301) 405-4826
FAX: (301) 405-9363
e-mail: yoonp@umd.edu, phy20723@gmail.com

EDUCATIONAL BACKGROUND

- Institution: Massachusetts Institute of Technology, Cambridge, MA
Degree: Ph.D.
Date Awarded: May, 1987
(Ph.D. THESIS: *Electromagnetic Waves and Instabilities in Relativistic Plasma*
Ph.D. Supervisor: Professor Ronald C. Davidson)
- Institution: Yonsei University, Seoul, Korea
Degree: B. S.
Date Awarded: February, 1980

EMPLOYMENT BACKGROUND INCLUDING SHORT-TERM APPOINTMENTS

- Institution: Korea Astronomy and Space Science Institute, Daejeon, Korea
(2017 – 2020) Senior Research Leader
- Institution: Ruhr Universität Bochum, Germany
(2015 – 2017) Visiting International Professor
- Institution: Kyung Hee University, Yongin, Korea
(2013 – present) International Scholar (IS) Professor
- Institution: Kyung Hee University, Yongin, Korea
(2009 – 2013) World Class University (WCU) Professor
- Institution: University of Maryland, College Park
(2005 – present) Senior Research Scientist
- Institution: Massachusetts Technological Laboratory, Belmont, MA
(2005 – present) Consultant.
- Institution: Washington Baptist University, Annandale, VA
(2006 – present) Professor of Science
- Institution: Pohang University of Science and Technology, Pohang, Korea
(2007 – 2008) Joint-Appointment Professor
- Institution: Johns Hopkins University, Applied Physics Laboratory, Laurel, MD
(1992 – 2009) Consultant.
- Institution: Kyoto University, Japan
(2002) Visiting Professor
- Institution: University of Maryland, College Park
(1994 – 2005) Associate Research Scientist
- Institution: University of Maryland, College Park
(1990 – 1994) Assistant Research Scientist

- Institution: University of Maryland, College Park (1989 – 1990) Research Associate
- Institution: Massachusetts Institute of Technology (1987 – 1989) Post-Doctoral Research Associate

PROFESSIONAL AFFILIATIONS, ACTIVITIES, AND HONORS

- American Physical Society (Fellow)
- American Physical Society (Member)
- American Geophysical Union (Member)
- GFT Foundation Science Award
- Korea Astronomy and Space Science Institute, Daejeon, Korea, Senior Research Leader
- Ruhr Universität Bochum Visiting International Professor Fellowship Award
- Visiting International Professor, Ruhr Universität Bochum, Germany (2015 – 2017)
- World Class University Professor, Kyung Hee University, Korea (2009 – 2013)
- International Scholar Professor, Kyung Hee University, Korea (2013 – present)
- Associate Editor of the Journal of Plasma Physics (2012 – 2014)
- Editorial Board Member of the Journal of Modern Physics (since 2012)
- Review Editor of the Frontiers in Physics, Space Physics (since 2013)

PUBLICATIONS

– Refereed Journal and Review Articles –

- 1987
 1. **P. H. Yoon** and R. C. Davidson, Closed-form analytical model of the electron whistler and cyclotron maser instabilities in relativistic plasma with arbitrary energy anisotropy, *Phys. Rev. A*¹ **35**, 2619-2630 (1987).
 2. **P. H. Yoon** and R. C. Davidson, Exact analytical model of the classical Weibel instability in a relativistic anisotropic plasma, *Phys. Rev. A* **35**, 2718-2721 (1987).
- 1989
 3. **P. H. Yoon**, Electromagnetic Weibel instability in a fully relativistic bi-Maxwellian plasma, *Phys. Fluids B*² **1**, 1336-1338 (1989).
 4. **P. H. Yoon** and T. Chang, Collective plasma microinstability as a possible mechanism for the one-sided core jet emission of extragalactic radio sources, *Astrophys. J.*³ **343**, 31-46 (1989).
 5. **P. H. Yoon** and T. Chang, Exact dielectric tensor for relativistic magnetized plasma with loss-cone and field-aligned drift, *J. Plasma Phys.*⁴ **42**, 193-204 (1989).
 6. **P. H. Yoon**, M. E. Mandt and C. S. Wu, Evolution of an unstable shell distribution of pickup cometary ions, *Geophys. Res. Lett.*⁵ **16**, 1473-1476 (1989).

¹Physical Review A (General Physics)

²Physics of Fluids B (Plasma Physics)

³The Astrophysical Journal

⁴Journal of Plasma Physics

⁵Geophysical Research Letters

7. R. C. Davidson and **P. H. Yoon**, Stabilization of the cyclotron autoresonance maser instability by axial momentum spread, *Phys. Rev. A* **39**, 2534-2538 (1989).
 8. R. C. Davidson and **P. H. Yoon**, Nonlinear bound on unstable field energy in relativistic electron beams and plasmas, *Phys. Fluids B* **1**, 195-203 (1989).
 9. C. S. Wu, **P. H. Yoon** and H. P. Freund, A theory of electron cyclotron waves generated along auroral field lines observed by ground facilities, *Geophys. Res. Lett.* **16**, 1461-1464 (1989).
- **1990**
10. **P. H. Yoon**, Electromagnetic fire-hose instability in a fully relativistic bi-Maxwellian plasma, *Phys. Fluids B* **2**, 842-844 (1990).
 11. **P. H. Yoon**, Amplification of a high-frequency electromagnetic wave by a relativistic plasma, *Phys. Fluids B* **2**, 867-873 (1990).
 12. **P. H. Yoon**, The effect of background temperature on the synchrotron maser process, *Phys. Fluids B* **2**, 1662-1665 (1990).
 13. **P. H. Yoon**, Kinetic instability associated with spherical shell distribution of cometary pickup ions, *Geophys. Res. Lett.* **17**, 1033-1036 (1990).
 14. **P. H. Yoon** and D. Krauss-Varban, Gyroharmonic maser instability for weakly relativistic electrons with loss-cone distribution, *Phys. Fluids B* **2**, 1918-1927 (1990).
 15. **P. H. Yoon** and R. C. Davidson, Alternate representation of the dielectric tensor for a relativistic magnetized plasma in thermal equilibrium, *J. Plasma Phys.* **43**, 269-281 (1990).
 16. **P. H. Yoon** and L. F. Ziebell, Development of pitch angle anisotropy and velocity diffusion of pickup ion shell distribution by solar wind turbulence, *J. Geophys. Res.*⁶ **95**, 17,085-17,094 (1990).
 17. C. S. Wu and **P. H. Yoon**, Kinetic hydromagnetic instabilities due to a spherical shell distribution of pickup ions, *J. Geophys. Res.* **95**, 10,273-10,278 (1990).
 18. L. F. Ziebell and **P. H. Yoon**, Pitch angle and velocity diffusions of newborn ions by turbulence in the solar wind, *J. Geophys. Res.* **95**, 21, 203-21,211 (1990).
 19. L. F. Ziebell, **P. H. Yoon**, C. S. Wu and D. Winske, Pitch angle diffusion of newborn ions due to intrinsic turbulence in the solar wind, *J. Geophys. Res.* **95**, 17,075-17,084 (1990).
- **1991**
20. **P. H. Yoon**, Plasma heating by a purely growing mode driven by cross-field currents in quasi-perpendicular collisionless shock, *Phys. Fluids B* **3**, 3074-3081 (1991).
 21. **P. H. Yoon** and C. S. Wu, Kinetic friction attributed to enhanced radiation by cyclotron maser instability, *Phys. Rev. A*⁷ **44**, 6819-6827 (1991).
 22. **P. H. Yoon** and C. S. Wu, Ion pickup by the solar wind via wave-particle interactions, in *Cometary Plasma Processes*, edited by A. D. Johnstone, AGU Monographs in Geophysics 61, AGU, Washington D.C., pp. 241-258 (1991).
 23. **P. H. Yoon** and L. F. Ziebell, Quasilinear diffusion rates of cometary ions, *Phys. Fluids B* **3**, 2124-2132 (1991).
 24. **P. H. Yoon**, L. F. Ziebell and C. S. Wu, Self-consistent pitch angle diffusion of newborn ions, *J. Geophys. Res.* **96**, 5469-5478 (1991).
 25. L. F. Ziebell, **P. H. Yoon** and C. S. Wu, Transition from reactive to kinetic electromagnetic instabilities generated by ring-beam ions, *Phys. Fluids B* **3**, 2455-2462 (1991).
 26. L. F. Ziebell, C. S. Wu and **P. H. Yoon**, Kilometric radio waves generated along auroral field lines observed by ground facilities: A theoretical model, *J. Geophys. Res.* **96**, 1495-1501 (1991).

⁶Journal of Geophysical Research (Space Physics)

⁷Physical Review A15 (formerly Physical Review A)

• **1992**

27. **P. H. Yoon**, Further evolution of velocity shell distribution of cometary and interstellar pickup ions and excitation of oblique Alfvén waves, *J. Geophys. Res.* **97**, 6467-6477 (1992).
28. **P. H. Yoon**, Quasilinear evolution of Alfvén-ion-cyclotron and mirror instabilities driven by ion temperature anisotropy, *Phys. Fluids B* **4**, 3627-3637 (1992).
29. **P. H. Yoon**, C. S. Wu and M. E. Mandt, Ion heating by kinetic cross-field streaming instability due to reflected ions at a quasi-perpendicular shock, *Phys. Fluids B* **4**, 719-729 (1992).
30. C. S. Wu, **P. H. Yoon**, L. F. Ziebell, C. L. Chang and H. K. Wong, A purely growing electromagnetic mode operative in the geomagnetic tail, *J. Geophys. Res.* **97**, 141-151 (1992).

• **1993**

31. **P. H. Yoon** and A. T. Y. Lui, Nonlinear analysis of generalized cross-field current instability, *Phys. Fluids B* **5**, 836-853 (1993).
32. **P. H. Yoon**, C. S. Wu and A. S. de Assis, Effect of finite ion gyroradius on the fire-hose instability in a high-beta plasma, *Phys. Fluids B* **5**, 1971-1979 (1993).
33. A. T. Y. Lui, **P. H. Yoon**, and C.-L. Chang, Quasi-linear analysis of ion Weibel instability in the Earth's neutral sheet, *J. Geophys. Res.* **98**, 153-163 (1993).

• **1994**

34. **P. H. Yoon** and C. S. Wu, Plasma emission via a beam instability with density modulation, *Phys. Plasmas*⁸ **1**, 76-89 (1994).
35. **P. H. Yoon**, A. T. Y. Lui, and C.-L. Chang, Lower-hybrid-drift instability operative in the geomagnetic tail, *Phys. Plasmas* **1**, 3033-3043 (1994).
36. **P. H. Yoon**, C. S. Wu, A. F.-Viñas, M. J. Reiner, J. Fainberg, and R. G. Stone, Theory of $2\omega_{pe}$ radiation induced by the bow shock, *J. Geophys. Res.* **99**, 23,481-23,488 (1994).
37. C. S. Wu, **P. H. Yoon** and G. C. Zhou, Generation of radiation in solar corona and interplanetary space by energetic electrons, *Astrophys. J.* **429**, 406-414 (1994).

• **1995**

38. **P. H. Yoon**, Plasma emission by a nonlinear beam instability, *Phys. Plasmas* **2**, 537-548 (1995).
39. **P. H. Yoon**, Garden-hose instability in high-beta plasmas, *Phys. Scr.*⁹ **T60**, 127-135 (1995).
40. **P. H. Yoon** and L. F. Ziebell, Quasilinear evolution of cyclotron maser instability, *Phys. Rev. E.*¹⁰ **51**, 4908-4916 (1995).
41. A. T. Y. Lui, C.-L. Chang, and **P. H. Yoon**, Preliminary nonlocal analysis of cross-field current instability for substorm expansion onset, *J. Geophys. Res.* **100**, 19147-19154 (1995).
42. L. F. Ziebell and **P. H. Yoon**, Quasilinear analysis of loss-cone driven weakly relativistic electron cyclotron maser instability, *Phys. Plasmas* **2**, 1285-1295 (1995).

• **1996**

43. **P. H. Yoon** and A. T. Y. Lui, Nonlocal ion-Weibel instability in the geomagnetic tail, *J. Geophys. Res.* **101**, 4899-4906 (1996).
44. **P. H. Yoon** and L. F. Ziebell, An emission mechanism for extragalactic radio jets, *Astrophys. J.* **459**, 529-534 (1996).

⁸Physics of Plasmas (formerly Physics of Fluids B)

⁹Physica Scripta

¹⁰Physical Review E (formerly Physical Review A15)

45. **P. H. Yoon**, J. F. Drake, and A. T. Y. Lui, Theory and simulation of Kelvin-Helmholtz instability in the geomagnetic tail, *J. Geophys. Res.* **101**, 27,327-27,337 (1996).
46. **P. H. Yoon**, A. T. Weatherwax, T. J. Rosenberg, and J. LaBelle, Lower ionospheric cyclotron maser theory: A possible source of $2f_{ce}$ and $3f_{ce}$ auroral radio emissions, *J. Geophys. Res.* **101**, 27,015-27,025 (1996).
- **1997**
47. **P. H. Yoon**, Plasma emission by a nonlinear beam instability in a weakly magnetized plasma, *Phys. Plasmas* **4**, 3868-3881 (1997).
48. **P. H. Yoon**, A. T. Y. Lui, and L. F. Ziebell, Two-dimensional Hall-MHD simulation of current sheet dynamics during substorm growth phase, *J. Geophys. Res.* **102**, 26,979-26,991 (1997): Correction, **103**, 6923-6927 (1998).
49. Y. Li, **P. H. Yoon**, C. S. Wu, A. T. Weatherwax, J. K. Chao, and B. H. Wu, Ion pitch-angle scattering by Alfvén waves, *Phys. Plasmas* **4**, 4103-4117 (1997).
50. C. S. Wu, **P. H. Yoon** and J. K. Chao, Motion of ions influenced by Alfvén waves, *Phys. Plasmas* **4**, 856-862 (1997).
- **1998**
51. **P. H. Yoon**, On the higher-order nonlinear corrections to the theory of plasma emission by a nonlinear beam instability, *Phys. Plasmas* **5**, 2590-2595 (1998).
52. **P. H. Yoon** and A. T. Weatherwax, A theory for AKR fine frequency structure, *Geophys. Res. Lett.* **25**, 4461-4464 (1998).
53. **P. H. Yoon**, A. T. Weatherwax, and T. J. Rosenberg, On the generation of auroral radio emissions at harmonics of the lower ionospheric electron cyclotron frequency: X , O and Z mode maser calculations, *J. Geophys. Res.* **103**, 4071-4078 (1998).
54. **P. H. Yoon**, A. T. Y. Lui, and H. K. Wong, Two-fluid theory of drift-kink instability in a one-dimensional neutral sheet, *J. Geophys. Res.* **103**, 11,875-11,886 (1998).
55. **P. H. Yoon**, A. T. Weatherwax, T. J. Rosenberg, J. LaBelle, and S. G. Shepherd, Propagation of medium frequency (1–4 MHz) auroral radio waves to the ground via the Z -mode radio window, *J. Geophys. Res.* **103**, 29,267-29,276 (1998).
56. C. S. Wu, Y. Li, J. K. Chao, **P. H. Yoon**, and L. C. Lee, Solar energetic ions created in a reconnection layer by Alfvén-wave pickup, *Astrophys. J.* **495**, 951-956 (1998).
- **1999**
57. **P. H. Yoon**, C. S. Wu, and Y. Li, Excitation of extraordinary-Bernstein waves by a beam of energetic electrons, *J. Geophys. Res.* **104**, 19,801-19,816 (1999).
- **2000**
58. **P. H. Yoon**, Generalized weak turbulence theory, *Phys. Plasmas* **7**, 4858-4871 (2000).
59. **P. H. Yoon**, L. F. Ziebell, and C. S. Wu, Excitation of Langmuir waves in interplanetary space, *J. Geophys. Res.* **105**, 27,369-27,375 (2000).
60. **P. H. Yoon**, A. T. Weatherwax, and J. LaBelle, Discrete electrostatic eigenmodes associated with ionospheric density structure: Generation of auroral roar fine frequency structure, *J. Geophys. Res.* **105**, 27,589-27,596 (2000).
61. C. S. Wu, **P. H. Yoon** and Y. Li, A new scenario for type III solar radio emission, *Astrophys. J.* **540**, 572-582 (2000).

62. C. S. Wu, Y. Li, and **P. H. Yoon**, On the harmonic component of type III solar radio bursts, in *Radio Astronomy at Long Wavelengths*, edited by R. G. Stone, K. W. Weiler, M. L. Goldstein, and J.-L. Bougeret, Geophysical Monograph 119, AGU, Washington D.C., pp. 47-56 (2000).
63. L. F. Ziebell, **P. H. Yoon**, and C. S. Wu, Maser-beam instability of Bernstein waves, *Phys. Plasmas* **7**, 4720-4728 (2000).
- **2001**
64. **P. H. Yoon** and A. T. Y. Lui, On the drift-sausage mode in one-dimensional current sheet, *J. Geophys. Res.* **106**, 1939-1948 (2001).
65. **P. H. Yoon**, and A. T. Y. Lui, Stabilization of lower-hybrid drift instability in the magnetotail by finite north-south magnetic field component and destabilization by sheared cross-field flow, *J. Geophys. Res.* **106**, 13,203-13,213 (2001).
66. X. Y. Wang, C. S. Wu, S. Wang, J. K. Chao, Y. Lin, and **P. H. Yoon**, A source of energetic particles associated with solar flares, *Astrophys. J.* **547**, 1159-1166 (2001).
67. L. F. Ziebell, R. Gaelzer, and **P. H. Yoon**, Nonlinear development of weak beam-plasma instability, *Phys. Plasmas* **8**, 3982-3995 (2001).
- **2002**
68. **P. H. Yoon** and R. Gaelzer, Nonlinear frequency shifts of plasma eigenmodes, *Phys. Plasmas* **9**, 4166-4173 (2002).
69. **P. H. Yoon** and R. Gaelzer, Effects of nonlinear frequency shifts on certain induced scattering processes, *Phys. Plasmas* **9**, 4520-4524 (2002).
70. **P. H. Yoon**, A. T. Y. Lui, and M. I. Sitnov, Generalized lower-hybrid drift instabilities in current sheet equilibrium, *Phys. Plasmas* **9**, 1526-1538 (2002).
71. **P. H. Yoon**, C. S. Wu, and C. B. Wang, Generation of type III solar radio bursts in low corona by direct amplification: II. Further numerical study, *Astrophys. J.* **576**, 552-560 (2002).
72. Y. P. Chen, G. C. Zhou, **P. H. Yoon**, and C. S. Wu, A beam-maser instability: direct amplification of radiation, *Phys. Plasmas*, **9**, 2816-2821 (2002).
73. R. Gaelzer, L. F. Ziebell, and **P. H. Yoon**, Generation of harmonic Langmuir mode by beam-plasma instability, *Phys. Plasmas* **9**, 96-110 (2002).
74. O. J. G. Silveira, L. F. Ziebell, R. Gaelzer, and **P. H. Yoon**, Unified formulation for inhomogeneity-driven instabilities in the lower-hybrid range, *Phys. Rev. E* **65**, 036407 (2002).
75. M. I. Sitnov, A. S. Sharma, P. N. Guzdar, and **P. H. Yoon**, Reconnection onset in the tail of Earth's magnetosphere, *J. Geophys. Res.* **107** (A9), 1256, doi: 10.1029/2001JA009148 (2002).
76. A. T. Weatherwax, **P. H. Yoon** and J. LaBelle, Interpreting observations of MF/HF radio emissions: Unstable wave modes and possibilities to passively diagnose ionospheric densities, *J. Geophys. Res.* **107** (A8), doi: 10.1029/2001JA000315 (2002).
77. C. S. Wu, C. B. Wang, **P. H. Yoon**, H. N. Zheng, and S. Wang, Generation of type III solar radio bursts in the low corona by direct amplification, *Astrophys. J.* **575**, 1094-1103 (2002).
- **2003**
78. **P. H. Yoon**, R. Gaelzer, T. Umeda, Y. Omura, and H. Matsumoto, Harmonic Langmuir waves: I. Nonlinear dispersion relation, *Phys. Plasmas* **10**, 364-372 (2003).
79. R. Gaelzer, **P. H. Yoon**, T. Umeda, Y. Omura, and H. Matsumoto, Harmonic Langmuir waves: II. Turbulence spectrum, *Phys. Plasmas* **10**, 373-381 (2003).
80. T. Umeda, Y. Omura, **P. H. Yoon**, R. Gaelzer, and H. Matsumoto, Harmonic Langmuir waves: III. Vlasov simulation, *Phys. Plasmas* **10**, 382-391 (2003).

81. **P. H. Yoon**, C.-M. Ryu, and T. Rhee, Particle kinetic equation including weakly turbulent mode coupling, *Phys. Plasmas* **10**, 3881-3886 (2003).
82. **P. H. Yoon** and A. T. Y. Lui, Effects of magnetized ions on the lower-hybrid-drift instability, *Phys. Plasmas* **10**, 4260-4264 (2003).
83. J. LaBelle, R. A. Treumann, **P. H. Yoon**, and M. Karlicky, A model of zebra emission in solar type IV radio bursts, *Astrophys. J.* **593**, 1195-1207 (2003).
84. S. Yi, C.-M. Ryu, and **P. H. Yoon**, Nonlinear frequency shift of a coherent dust-acoustic wave in the presence of dust-acoustic turbulence, *Phys. Plasmas* **10**, 4278-4283 (2003).
- **2004**
85. **P. H. Yoon**, Formation of quasi-power law weak Langmuir turbulence spectrum by harmonic generation, *Nonlin. Proc. Geophys.*¹¹, **11**, 267-274 (2004).
86. **P. H. Yoon** and A. T. Y. Lui, Lower-hybrid-drift and modified-two-stream instabilities in current sheet equilibrium, *J. Geophys. Res.* **109**, A02210, doi:10.1029/2003JA010180 (2004).
87. **P. H. Yoon**, and A. T. Y. Lui, Model of ion or electron dominated current sheet, *J. Geophys. Res.*, **109**, A11213, doi: 10.1029/2004JA010555 (2004).
88. M. I. Sitnov, A. T. Y. Lui, P. N. Guzdar, and **P. H. Yoon**, Current-driven instabilities in forced current sheets, *J. Geophys. Res.* **109**, A03205, doi:10.1029/2003JA010123 (2004).
89. H. S. Uhm, H. S. Kim, and **P. H. Yoon**, High harmonic excitations in relativistic electron beam propagation, *J. Korean Phys. Soc.*¹² **44**, 333-340 (2004).
90. C. S. Wu, M. J. Reiner, **P. H. Yoon**, H. N. Zheng, and S. Wang, On low-frequency type III solar radio bursts observed in interplanetary space, *Astrophys. J.*, **605**, 503-510 (2004).
91. S. Yi, C.-M. Ryu, and **P. H. Yoon**, Nonlinear frequency shift of the dust ion-acoustic wave, *Phys. Plasmas*, **11**, 3191-3195 (2004).
- **2005**
92. **P. H. Yoon**, Effects of spontaneous fluctuations on the generalized weak turbulence theory, *Phys. Plasmas* **12**, 042306, doi:10.1063/1.1864073 (2005).
93. **P. H. Yoon**, Progress in the kinetic theory of electrostatic harmonics of plasma waves, *Phys. Plasmas* **12**, 052313, doi:10.1063/1.1897713 (2005).
94. **P. H. Yoon**, Nonlinear electromagnetic susceptibilities of unmagnetized plasmas, *Phys. Plasmas* **12**, 112306, doi:10.1063/1.2136108 (2005).
95. **P. H. Yoon**, Weak Langmuir turbulence, in *Frontiers in Magnetospheric Plasma Physics, Proc. 16th COSPAR Colloquium*, edited by M. Hoshino, Y. Omura, and L. J. Lanzerotti, Elsevier, New York, pp. 251-260 (2005).
96. **P. H. Yoon** and J. LaBelle, Discrete Langmuir waves in density structure, *J. Geophys. Res.* **110**, A11308, doi:10.1029/2005JA011186 (2005).
97. **P. H. Yoon** and A. T. Y. Lui, A class of exact two-dimensional kinetic current sheet equilibria, *J. Geophys. Res.* **110**, A01202, doi:10.1029/2003JA010308 (2005).
98. **P. H. Yoon** and A. T. Y. Lui, Reply to Comment by V. Génot on "A class of exact two-dimensional kinetic current sheet equilibria," *J. Geophys. Res.* **110**, doi:10.1029/2005JA011104 (2005).
99. **P. H. Yoon** and A. T. Y. Lui, Exact energy principle in magnetic reconnection for current sheet models, *Phys. Rev. Lett.*¹³ **94**, 175004, doi:10.1103/PhysRevLett.94.175004 (2005).

¹¹Nonlinear Processes in Geophysics

¹²Journal of Korean Physical Society

¹³Physical Review Letters

100. **P. H. Yoon** and J. D. Menietti, On fine structure emission associated with plasmaspheric density irregularities, *Geophys. Res. Lett.* **32**, L23103, doi:10.1029/2005GL023795 (2005).
101. **P. H. Yoon**, S. Yi, and C.-M. Ryu, Harmonics of electromagnetic and electrostatic plasma waves, *Phys. Plasmas* **12**, 052305, doi:10.1063/1.1884129 (2005).
102. **P. H. Yoon**, T. Rhee and C.-M. Ryu, Effects of spontaneous thermal fluctuations on nonlinear beam-plasma interaction, *Phys. Plasmas* **12**, 062310, doi:10.1063/1.1925618 (2005).
103. **P. H. Yoon**, T. Rhee, and C.-M. Ryu, Self-consistent generation of superthermal electrons by beam-plasma interaction, *Phys. Rev. Lett.* **95**, 215003, doi:10.1103/PhysRevLett.95.215003 (2005).
104. C. S. Wu, C. B. Wang, G. C. Zhou, S. Wang, and **P. H. Yoon**, Altitude-dependent emission of type III solar radio bursts, *Astrophys. J.* **621**, 1129-1136 (2005).
- **2006**
105. **P. H. Yoon**, Statistical theory of electromagnetic weak turbulence, *Phys. Plasmas* **13**, 022302, doi:10.1063/1.2167587 (2006).
106. **P. H. Yoon** and A. T. Y. Lui, Nonlinear energy principle for model current sheets, *Phys. Plasmas* **13**, 012301, doi:10.1063/1.2151181 (2006).
107. **P. H. Yoon** and A. T. Y. Lui, Further investigation of energy principle for model current sheets, *Phys. Plasmas* **13**, 032301, doi:10.1063/1.2173964 (2006).
108. **P. H. Yoon** and A. T. Y. Lui, Quasilinear theory of anomalous resistivity, *J. Geophys. Res.* **111**, A02203, doi:10.1029/2005JA011482 (2006).
109. **P. H. Yoon** and A. T. Y. Lui, Energy conversion during magnetic reconnection for magnetotail-like equilibria, *Phys. Plasmas* **13**, 102303, doi:10.1063/1.12354580 (2006).
110. **P. H. Yoon**, A. T. Y. Lui, and R. B. Sheldon, On the current sheet model with κ distribution, *Phys. Plasmas* **13**, 102108, doi:10.1063/1.12357720 (2006).
111. **P. H. Yoon**, J. LaBelle, A. T. Weatherwax, and M. Samara, Mode conversion radiation in the terrestrial ionosphere and magnetosphere, *Geospace Electromagnetic Waves and Radiation*, edited by J. W. LaBelle and R. A. Treumann, Springer, Berlin Heidelberg, pp. 211-234 (2006).
112. **P. H. Yoon**, T. Rhee, and C.-M. Ryu, Self-consistent formation of electron κ distribution: 1. Theory, *J. Geophys. Res.* **111**, A09106, doi:10.1029/2006JA011681 (2006).
113. T. Rhee, C.-M. Ryu, and **P. H. Yoon**, Self-consistent formation of electron κ distribution: 2. Further numerical investigation, *J. Geophys. Res.* **111**, A09107, doi:10.1029/2006JA011682 (2006).
114. J. D. Menietti and **P. H. Yoon**, Plasma waves and fine structure emission bands within a plasmopause density cavity source region, *Geophys. Res. Lett.* **33**, L15101, doi:10.1029/2005GL025610 (2006).
115. C. Mok, C.-M. Ryu, **P. H. Yoon**, and A. T. Y. Lui, Global two-fluid stability of bifurcated current sheets, *J. Geophys. Res.* **111**, A03203, doi:10.1029/2005JA011424 (2006).
116. C. B. Wang, C. S. Wu, and **P. H. Yoon**, Heating of ions by Alfvén waves via non-resonant interactions, *Phys. Rev. Lett.* **96**, 125001, doi: 10.1103/PhysRevLett.96.125001 (2006).
117. A. T. Weatherwax, **P. H. Yoon**, J. Hughes, J. LaBelle, and L. F. Ziebell, Further study of flickering auroral roar emission: 2. Theory and numerical calculations, *J. Geophys. Res.* **111**, A07302, doi:10.1029/2005JA011288 (2006).
- **2007**
118. **P. H. Yoon**, Relativistic Weibel instability, *Phys. Plasmas* **14**, 024504, doi:10.1063/1.2646285 (2007).
119. **P. H. Yoon**, Spontaneous thermal magnetic field fluctuation, *Phys. Plasmas* **14**, 064504, doi:10.1063/1.2741388 (2007).
120. **P. H. Yoon**, Kinetic theory of hydromagnetic turbulence I: Formal results for parallel propagation, *Phys. Plasmas* **14**, 102302, doi:10.1063/1.2780139 (2007).

121. **P. H. Yoon** and T.-M. Fang, Kinetic theory of hydromagnetic turbulence II: Susceptibilities, *Phys. Plasmas*, **14**, 102303, doi:10.1063/1.2780140 (2007).
122. **P. H. Yoon** and A. T. Y. Lui, Anomalous resistivity by fluctuation in the lower-hybrid frequency range, *J. Geophys. Res.* **112**, A06207, doi:10.1029/2006JA012209 (2007).
123. **P. H. Yoon** and A. T. Y. Lui, X and Y line equilibria, *Phys. Plasmas* **14**, 104504, doi:10.1063/1.2801715 (2007).
124. **P. H. Yoon**, C. B. Wang, and C. S. Wu, Ring-beam driven maser instability for quasi-perpendicular shocks, *Phys. Plasmas* **14**, 022901, doi:10.1063/1.2437118 (2007).
125. **P. H. Yoon**, S. Ye, J. LaBelle, A. T. Weatherwax, and J. D. Menietti, Methods in the study of discrete upper-hybrid waves, *J. Geophys. Res.* **112**, A11305, doi:10.1029/2007JA012683 (2007).
126. R. Gaelzer, **P. H. Yoon**, L. F. Ziebell, and A. F. Viñas, Superthermal electrons distributions in the solar wind environment, *Adv. Geosci.* **14**, 111 (2007).
127. L. F. Ziebell, R. Gaelzer, and **P. H. Yoon**, Dynamics of beam-plasma instability and Langmuir wave decay in two-dimensions, *Adv. Geosci.*¹⁴ **14**, 95 (2007).
128. J. D. Menietti, **P. H. Yoon**, and D. A. Gurnett, Possible eigenmode trapping in density enhancements in Saturn's inner magnetosphere, *Geophys. Res. Lett.* **34**, L04103, doi:10.1029/2006GL028647 (2007).
129. C.-M. Ryu, T. Rhee, T. Umeda, **P. H. Yoon**, and Y. Omura, Turbulent acceleration of superthermal electrons, *Phys. Plasmas* **14**, 100701, doi:10.1063/1.2779282 (2007).
130. C. S. Wu and **P. H. Yoon**, Proton heating via nonresonant scattering off intrinsic Alfvénic turbulence, *Phys. Rev. Lett.* **99**, 075001, doi:10.1103/PhysRevLett.99.075001 (2007).
131. S. Ye, J. LaBelle, **P. H. Yoon**, and A. T. Weatherwax, Experimental tests of the eigenmode theory of auroral roar fine structure and its application to remote sensing, *J. Geophys. Res.* **112**, A12304, doi:10.1029/2007JA012525 (2007).
132. S. Yi, **P. H. Yoon**, and C.-M. Ryu, Multiple harmonic plasma emission, *Phys. Plasmas* **14**, 013301, doi:10.1063/1.2424556 (2007).

• **2008**

133. **P. H. Yoon** and T.-M. Fang, Parallel cascade of Alfvén waves, *Plasma Phys. Control. Fusion*¹⁵ **50**, 085007, doi:10.1088/0741-3335/50/8/085007 (2008).
134. **P. H. Yoon** and T.-M. Fang, Dispersion surfaces for low-frequency modes, *Plasma Phys. Control. Fusion* **50**, 125002, doi:10.1088/0741-3335/50/12/125002 (2008).
135. **P. H. Yoon** and T.-M. Fang, Kinetic theory for low-frequency turbulence in magnetized plasmas including discrete-particle effects, *Phys. Plasmas* **15**, 122312, doi: 10.1063/1.3050069 (2008).
136. **P. H. Yoon** and A. T. Y. Lui, Drift instabilities in current sheets with guide field, *Phys. Plasmas* **15**, 072101, doi: 10.1063/1.2938386 (2008).
137. **P. H. Yoon** and A. T. Y. Lui, Lower-hybrid drift and Buneman instabilities in current sheets with guide field, *Phys. Plasmas* **15**, 112105, doi: 10.1063/1.2996115 (2008).
138. **P. H. Yoon**, Y. Lin, X. Y. Wang, and A. T. Y. Lui, Theory and simulation of lower-hybrid drift instability for current sheet with guide field, *Phys. Plasmas* **15**, 112103, doi: 10.1063/1.3013451 (2008).
139. A. T. Y. Lui, **P. H. Yoon**, C. Mok, and C.-M. Ryu, Inverse cascade feature in current disruption, *J. Geophys. Res.* **113**, A00C06, doi: 10.1029/2008JA013521, (2008).
140. R. Gaelzer, L. F. Ziebell, A. F.-Viñas, **P. H. Yoon**, and C.-M. Ryu, Asymmetric solar wind electron superthermal distributions, *Astrophys. J.* **677**, 676-682 (2008).
141. L. F. Ziebell, R. Gaelzer, and **P. H. Yoon**, Dynamics of Langmuir wave decay in two-dimensions, *Phys. Plasmas*. **15**, 032303, doi: 10.1063/1.2844740 (2008).

¹⁴Advances in Geosciences

¹⁵Plasma Physics and Controlled Fusion

142. L. F. Ziebell, R. Gaelzer, J. Pavan, and **P. H. Yoon**, Two-dimensional nonlinear dynamics of beam-plasma instability, *Plasma Phys. Control. Fusion* **50** 085011, doi:10.1088/0741-3335/50/8/085011 (2008).
143. W. Zhang, Z. Lin, **P. H. Yoon**, Y. Lin, and X. Wang, Two-fluid formulation of lower-hybrid-drift instabilities in current-sheet equilibrium with a guide field, *Commun. Comput. Phys.*¹⁶ **4**, 719 (2008).
- **2009**
144. **P. H. Yoon**, Beam-plasma interaction and nonlinear effects, in *New Developments in Nonlinear Plasma Physics*, Edited by B. Eliasson and P. K. Shukla (American Institute of Physics, New York, 2009), pp. 50–73.
145. **P. H. Yoon** and T.-M. Fang, Proton heating by parallel Alfvén wave cascade, *Phys. Plasmas* **16**, 062314, doi: 10.1063/1.3159605 (2009).
146. **P. H. Yoon**, A. T. Y. Lui, and J. W. Bonnell, Identification of plasma instability from wavelet spectra in a current disruption event, *J. Geophys. Res.* **114**, A04207, doi:10.1029/2008JA013816 (2009).
147. **P. H. Yoon**, C. B. Wang, and C. S. Wu, Pitch-angle diffusion of ions via non-resonant interaction with Alfvénic turbulence, *Phys. Plasmas* **16**, 102102, doi:10.1063/1.3236749 (2009).
148. H. Che, J. F. Drake, M. Swisdak, and **P. H. Yoon**, Nonlinear development of streaming instabilities in strongly magnetized plasma, *Phys. Rev. Lett.* **102**, 145004, doi:10.1103/PhysRevLett.102.145004 (2009).
149. C. A. Colpitts, M. Samara, and J. LaBelle, and **P. Yoon**, Rocket observations of two distinct types of dispersed features of auroral HF waves, *J. Geophys. Res.* **114**, A05202, doi:10.1029/2008JA013741 (2009).
150. H. H. Kaang, C.-M. Ryu, and **P. H. Yoon**, Nonlinear saturation of relativistic Weibel instability driven by thermal anisotropy, *Phys. Plasmas* **16**, 082103, doi:10.1063/1.3172941 (2009).
151. J. D. Menietti, S.-Y. Ye, **P. H. Yoon**, O. Santolik, A. M. Rymer, D. A. Gurnett, and A. J. Coates, Analysis of narrowband emission observed in the Saturn magnetosphere, *J. Geophys. Res.* **114**, A06206, doi: 10.1029/2008JA013982 (2009).
152. J. Pavan, L. F. Ziebell, R. Gaelzer, and **P. H. Yoon**, Two-dimensional nonlinear dynamics of bi-directional beam-plasma instability, *J. Geophys. Res.* **114**, A01106, doi: 10.1029/2008JA013557 (2009).
153. J. Pavan, L. F. Ziebell, **P. H. Yoon**, and R. Gaelzer, Decay of beam-driven Langmuir wave into ion-acoustic turbulence in two dimensions, *Plasma Phys. Control. Fusion* **51**, 095011, doi: 10.1088/0741-3335/51/9/095011 (2009).
154. T. Rhee, C.-M. Ryu, M. Woo, H. H. Kaang, S. Yi, and **P. H. Yoon**, Multiple harmonic plasma emission, *Astrophys. J.* **694**, 618, doi: 10.1088/0004-637X/694/1/618 (2009).
155. C.-M. Ryu, H.-C. Ahn, T. Rhee, **P. H. Yoon**, L. F. Ziebell, R. Gaelzer, and A. F. Viñas, Simulation of asymmetric solar wind electron distributions, *Phys. Plasmas* **16**, 062902, doi: 10.1063/1.3085795 (2009).
156. J. J. Seough and **P. H. Yoon**, Analytic models of warm plasma dispersion relations, *Phys. Plasmas*, **16**, 092103, doi: 10.1063/1.3216459 (2009).
157. C. S. Wu, **P. H. Yoon**, and C. B. Wang, On nonresonant proton heating via intrinsic Alfvénic turbulence, *Phys. Plasmas* **16**, 054503, doi: 10.1063/1.3147924 (2009).
158. S. Yi, C.-M. Ryu, and **P. H. Yoon**, Study of nonlinear electron beam-plasma interaction based on the generalized weak turbulence theory, *J. Kor. Phys. Soc.* **54**, 334 (2009).

¹⁶Communications in Computational Physics

• **2010**

159. **P. H. Yoon**, Toward a fully kinetic theory of turbulence in magnetized plasmas, in *Pickup Ions Throughout the Heliosphere and Beyond, Proc. 9th Ann. Int. Astrophys. Conf.*, Edit. J. A. Le Roux, V. Florinski, G. P. Zank, and A. J. Coates, *AIP Conf. Proc.*¹⁷ **1302**, 204 (2010).
160. **P. H. Yoon**, Weak turbulence theory for reactive instability, *Phys. Plasmas* **17**, 112316, doi:10.1063/1.3517101 (2010).
161. **P. H. Yoon** and T. Umeda, Nonlinear turbulence theory and simulation of Buneman instability, *Phys. Plasmas* **17**, 112317, doi:10.1063/13517103 (2010).
162. **P. H. Yoon**, J. J. Seough, K. K. Khim, H. Kim, H.-J. Kwon, J. Park, S. Parkh, K. S. Park, Analytic model of electromagnetic ion-cyclotron anisotropy instability, *Phys. Plasmas* **17**, 082111, doi:10.1063/1.3480101 (2010).
163. H. Che, J. F. Drake, M. Swisdak, and **P. H. Yoon**, Electron holes and heating in the reconnection dissipation region, *Geophys. Res. Lett.* **37**, L11105, doi: 10.1029/2010GL043608 (2010).
164. C. A. Colpitts, J. LaBelle, C. A. Kletzing, and **P. H. Yoon**, Further sounding rocket observations of structured whistler mode auroral emissions, *J. Geophys. Res.* **115**, A10243, doi:10.1029/2009JA015095 (2010).
165. J. D. Menietti, **P. H. Yoon**, S.-Y. Ye, B. Cecconi, and A. M. Rymer, Source mechanism of Saturn narrowband emission, *Ann. Geophys.*¹⁸ **28**, 1013-1021 (2010).
166. C. Mok, C.-M. Ryu, **P. H. Yoon**, and A. T. Y. Lui, Obliquely propagating electromagnetic drift ion-cyclotron instability, *J. Geophys. Res.*, **115**, A04218, doi: 10.1029/2009JA014871 (2010).
167. J. Pavan, L. F. Ziebell, **P. H. Yoon**, and R. Gaelzer, Generation of quasi-isotropic electron population during nonlinear beam-plasma interaction, *J. Geophys. Res.* **115**, A01103, doi: 10.1029/2009JA014447 (2010).
168. J. Pavan, L. F. Ziebell, **P. H. Yoon**, and R. Gaelzer, Ionospheric ion-acoustic enhancements by turbulent counterstreaming electron beam-plasma interaction, *J. Geophys. Res.* **115**, A02310 doi: 10.1029/2009JA014448 (2010).
169. S. Yi, T. Rhee, C.-M. Ryu, and **P. H. Yoon**, Simulation and theory for two-dimensional beam-plasma instability, *Phys. Plasmas* **17**, 122318, doi: 10.1063/1.3529359 (2010).
170. D. Zou, W. Yang, Y. Chen and **P. H. Yoon**, Obliquely propagating generalized lower-hybrid drift instability with nonlocal two-fluid theory in current-sheet equilibrium, *Phys. Plasmas* **17**, 102102, doi:10.1063/1.3487685 (2010).

• **2011**

171. **P. H. Yoon**, Large-amplitude whistler waves and electron acceleration, *Geophys. Res. Lett.* **38**, L12105, doi:10.1029/2011GL047893 (2011).
172. **P. H. Yoon**, Asymptotic equilibrium between Langmuir turbulence and suprathermal electrons, *Phys. Plasmas* **18**, 122303, doi: 10.1063/1.3662105 (2011).
173. **P. H. Yoon**, J. J. Seough, J. Lee, J. An, and J. O. Lee, Empirical model of whistler anisotropy instability, *Phys. Plasmas* **18**, 102103, doi:10.1063/1.3647504 (2011).
174. **P. H. Yoon**, D. Summers, J. J. Seough, K. H. Kim, and D. H. Lee, Finite-beta effects on quasi-linear diffusion coefficients, *J. Geophys. Res.* **116**, A12214, doi:10.1029/2011JA017070 (2011).
175. N. L. Bunch, J. LaBelle, **P. Yoon**, A. T. Weatherwax, Theoretical constraints on the generation mechanism of auroral medium frequency burst radio emissions, *J. Geophys. Res.* **116**, A01315, doi:10.1029/2010JA015951 (2011).

¹⁷AIP Conference Proceedings

¹⁸Annales Geophysicae

176. N. Jain, T. Umeda, **P. H. Yoon**, Modeling nonlinear development of Buneman instability with linear dispersion theory, *Plasma Phys. Contr. Fusion* **53**, 025010, doi: 10.1088/0741-3335/53/025010 (2011).
177. S. Lu, Q. Lu, X. Shao, **P. H. Yoon**, and S. Wang, Weibel instability and structures of magnetic island in anti-parallel collisionless magnetic reconnection, *Phys. Plasmas* **18**, 072105, doi: 10.1063/1.3605029 (2011).
178. J. Pavan, **P. H. Yoon**, and T. Umeda, Quasilinear theory and simulation of Buneman instability, *Phys. Plasmas* **18**, 042307, doi: 10.1063/1.3574359 (2011).
179. K. Rha, C.-M. Ryu, and **P. H. Yoon**, Particle heating by parametric decay of Alfvén-cyclotron and fast-magnetosonic waves, *Plasma Phys. Control. Fusion* **53**, 015014, doi: 10.1088/0741-3335/53/1/014014 (2011).
180. B. Wang, C.-B. Wang, **P. H. Yoon**, and C.-S. Wu, Stochastic heating and acceleration of minor ions by Alfvén Waves, *Geophys. Res. Lett.* **38**, L10103, doi:10.1029/2011GL047729 (2011).
181. L. F. Ziebell, **P. H. Yoon**, J. Pavan, and R. Gaelzer, Nonlinear evolution of beam-plasma instability in inhomogeneous medium, *Astrophys. J.* **727**, 16 (2011).
182. L. F. Ziebell, **P. H. Yoon**, J. Pavan, and R. Gaelzer, Ion acoustic enhancements generated by beam-plasma instability in auroral cavity, *J. Geophys. Res.* **116**, A03320, doi: 10.1029/2010JA016147 (2011).
183. L. F. Ziebell, **P. H. Yoon**, J. Pavan, and R. Gaelzer, Two-dimensional quasilinear beam-plasma instability in inhomogeneous media, *Plasma Phys. Contr. Fusion* **53**, 085004, doi: 10.1088/0741-3335/53/8/085004 (2011).
- **2012**
184. **P. H. Yoon**, Asymptotic equilibrium between Langmuir turbulence and suprathermal electrons in three dimensions, *Phys. Plasmas* **19**, 012304, doi:10.1063/1.3676159 (2012).
185. **P. H. Yoon**, Electron kappa distribution and steady-state Langmuir turbulence, *Phys. Plasmas* **19**, 052301, doi:10.1063/1.4710515 (2012).
186. **P. H. Yoon**, Turbulent equilibrium and nonextensive entropy, *Astrophys. Space Sci. Proc.*¹⁹ **33**, Part 3, 91-96, doi: 10.1007/978-3-642-30442-2_11 (2012).
187. **P. H. Yoon** and J. Seough, Quasilinear theory of anisotropy-beta relation for combined mirror and proton cyclotron instabilities, *J. Geophys. Res.* **117**, A08102, doi: 10.1029/2012JA017697 (2012).
188. **P. H. Yoon**, J. J. Seough, K. H. Kim, and D. H. Lee, Empirical versus exact numerical quasilinear analysis of electromagnetic instabilities driven by temperature anisotropy, *J. Plasma Phys.* **78**, 47, doi:10.1017/S0022377811000407 (2012).
189. **P. H. Yoon**, L. F. Ziebell, R. Gaelzer, R. P. Lin, and L. Wang, Langmuir turbulence and suprathermal electrons, *Space Sci. Rev.*²⁰ **173**, 459-489, DOI: 10.1007/s11214-012-9867-3 (2012).
190. **P. H. Yoon**, R. P. Lin, L. Wang, D. E. Larson, and S. D. Bale, Solar wind electrons and Langmuir turbulence, *AIP Conf. Proc.* **1436**, 80, doi: 10.1063/1.4723594 (2012).
191. **P. H. Yoon**, J. Hong, S. Kim, J. Lee, J. Lee, J. Park, K. S. Park, and J. J. Seough, Asymmetric solar wind electron distributions, *Astrophys. J.* **755**, 112, doi: 10.1088/0004-637X/755/2/112 (2012).
192. **P. H. Yoon**, L. F. Ziebell, R. Gaelzer, and J. Pavan, Electromagnetic weak turbulence theory revisited, *Phys. Plasmas* **19**, 102303, doi: 10.1063/1.4757224 (2012).
193. M. S. Janaki, B. Dasgupta, and **P. H. Yoon**, A two-fluid model of the bifurcated current sheet, *J. Geophys. Res.* **117**, A12201, doi: 10.1029/2012JA018178 (2012).
194. M. Lazar, **P. H. Yoon**, and R. Schlickeiser, Spontaneous electromagnetic fluctuations in unmagnetized plasmas III: Generalized kappa distributions, *Phys. Plasmas* **19**, 122108, <http://dx.doi.org/10.1063/1.4769308> (2012).

¹⁹Astrophysics and Space Science Proceedings

²⁰Space Science Reviews

195. K. Rha, C.-M. Ryu, and **P. H. Yoon**, Electromagnetic fluctuation spectrum associated with the drift Alfvén-cyclotron instability, *Phys. Plasmas* **19**, 072318, <http://dx.doi.org/10.1063/1.4737601> (2012).
196. R. Schlickeiser and **P. H. Yoon**, Spontaneous electromagnetic fluctuations in unmagnetized plasmas I: General theory and nonrelativistic limit, *Phys. Plasmas* **19**, 022105, doi:10.1063/1.3682985 (2012).
197. J. J. Seough and **P. H. Yoon**, Quasilinear theory of anisotropy-beta relations for proton cyclotron and parallel firehose instabilities, *J. Geophys. Res.* **117**, A08101, doi: 10.1029/2012JA017645 (2012).
198. L. Wang, R. P. Lin, C. Salem, M. Pulupa, D. E. Larson, **P. H. Yoon**, and J. G. Luhmann, Quiet-time interplanetary $\sim 2 - 20$ keV superhalo electrons at solar minimum, *Astrophys. J. Lett.*²¹, **753**, L23 (2012); doi: 10.1088/2041-8205/753/1/L23.
199. L. F. Ziebell, **P. H. Yoon**, R. Gaelzer, and J. Pavan, Langmuir condensation by spontaneous scattering off electrons in two dimensions, *Plasma Phys. Control. Fusion* **54**, 055012, doi: 10.1088/0741-3335/54/5/055012 (2012).
- **2013**
200. **P. H. Yoon**, L. F. Ziebell, R. Gaelzer, L. Wang, and R. P. Lin, Solar wind electron acceleration via Langmuir turbulence, *Terr. Atmos. Ocean. Sci.*²² **24**, No. 2, 175-182, doi: 10.3319/TAO.2012.05.30.01(SEC) (2013).
201. **P. H. Yoon** and J. Seough, Solar wind proton temperature anisotropy versus beta inverse correlation, *AIP Conf. Proc.* **1539**, 307 (2013); doi: 10.1063/1.4811049.
202. **P. H. Yoon**, V. S. Pandey, and D. H. Lee, Relativistic electron acceleration by oblique whistler waves, *Phys. Plasmas* **20**, 112902, doi: 10.1063/1.4831965 (2013).
203. T. Felten, R. Schlickeiser, **P. H. Yoon**, and M. Lazar, Spontaneous electromagnetic fluctuations in unmagnetized plasmas II. Relativistic form factors of aperiodic thermal modes, *Phys. Plasmas* **20**, 052113, doi:10.1063/1.4804402 (2013).
204. S.-Y. Lee, S. Yi, D. Lim, H.-E. Kim, J. Seough, and **P. H. Yoon**, Loss-cone driven cyclotron maser instability, *J. Geophys. Res.* **118**, 70367044 (2013); doi: 10.1002/2013JA019298.
205. J. Pavan, A. F. Viñas, **P. H. Yoon**, L. F. Ziebell, and R. Gaelzer, Solar wind strahl broadening by self-generated plasma waves, *Astrophys. J. Lett.* **769**, L30 (2013); doi:10.1088/2041-8205/769/2/L30.
206. K. Rha, C.-M. Ryu, and **P. H. Yoon**, Asymmetric electron distributions in the solar wind, *Astrophys. J. Lett.* **775**, L21, doi:10.1088/2041-8205/775/1/L21 (2013).
207. J. Seough, **P. H. Yoon**, K.-H. Kim, and D. H. Lee, Solar wind proton anisotropy versus beta relation, *Phys. Rev. Lett.* **110**, 071103 (2013); doi: 10.1103/PhysRevLett.110.071103.
208. F. J. R. Simões Jr., J. Pavan, R. Gaelzer, L. F. Ziebell, and **P. H. Yoon**, Particle-in-cell simulations on spontaneous thermal magnetic field fluctuations, *Phys. Plasmas* **20**, 100702 (2013); doi: 10.1063/1.4825249.
209. L. Wang, R. P. Lin, C. Salem, M. Pulupa, D. Larson, **P. H. Yoon**, and J. G. Luhmann, Quiet-time solar wind superhalo electrons at solar minimum, *AIP Conf. Proc.* **1539**, 299 (2013); doi: 10.1063/1.4811047.
210. S. Yi, S.-Y. Lee, H.-E. Kim, D. Lim, J. Seough, **P. H. Yoon**, M. C. Broughton, and J. LaBelle, Z-mode maser instability, *J. Geophys. Res.* **118**, 75847592 (2013); doi: 10.1002/2013JA019376.
211. S. Zaheer and **P. H. Yoon**, On quiet-time solar wind electron distributions in dynamical equilibrium with Langmuir turbulence, *Astrophys. J.* **775**, 108, doi:10.1088/0004-637X/775/2/108 (2013).
- **2014**
212. **P. H. Yoon**, Electron kappa distribution and quasi-thermal noise, *J. Geophys. Res.* **119**, 7074-7087 (2014); doi: 10.1002/2014JA020353.

²¹Astrophysical Journal Letters

²²Terrestrial, Atmospheric and Oceanic Sciences

213. **P. H. Yoon**, M. S. Janaki, and B. Dasgupta, Kinetic model of Janaki et al.'s bifurcated current sheet, *J. Geophys. Res.* **119**, 260-267 (2014); DOI: 10.1002/2013JA019617.
214. **P. H. Yoon**, J. Seough, and R. Gaelzer, Temperature anisotropy upper bounds and low-frequency electromagnetic fluctuations in the solar wind, in *Outstanding Problems in Heliophysics: Astron. Soc. Pacific Conf. Ser.*²³ vol. **484**, Edited by Q. Hu and G. P. Zank, 249-255 (Astron. Soc. Pacific, San Francisco, 2014); ISBN: 978-1-58381-852-7, e-Book ISBN: 978-1-58381-853-4.
215. **P. H. Yoon**, R. Schlickeiser, and U. Kolberg, Thermal fluctuation levels of magnetic and electric fields in unmagnetized plasma: The rigorous relativistic kinetic theory, *Phys. Plasmas* **21**, 032109, doi: 10.1063/1.4868232 (2014).
216. **P. H. Yoon**, V. S. Pandey, and D. H. Lee, Oblique nonlinear whistler wave, *J. Geophys. Res.* **119**, 1851-1862 (2014); DOI: 10.1002/2013JA018993.
217. **P. H. Yoon**, F. Hadi and A. Qamar, Bernstein instability driven thermal ring distribution, *Phys. Plasmas* **21**, 074502 (2014); doi: 10.1063/1.4887000.
218. **P. H. Yoon** and J. Seough, Proton-cyclotron and firehose instabilities in inhomogeneous plasmas, *J. Geophys. Res.* **119**, 7108-7119 (2014); doi: 10.1002/2014JA020261.
219. M. F. Bashir, N. Noreen, G. Murtaza, and **P. H. Yoon**, Relativistic Bernstein mode instability, *Plasma Phys. Contr. Fusion* **56**, 055009 (2014); doi: 10.1088/0741-3335/56/5/055009.
220. M. Broughton, J. LaBelle, and **P. H. Yoon**, A new auroral radio emission observed at ground-level, *J. Geophys. Res.* **119**, 1-9 (2014); DOI: 10.1002/2013JA019467.
221. F. Hadi, M. F. Bashir, A. Qamar, **P. H. Yoon**, and R. Schlickeiser, On the ordinary mode instability for low beta plasmas, *Phys. Plasmas* **21**, 052111 (2014); doi: 10.1063/1.4879823.
222. J. Hwang, K. Rha, J. Seough, and **P. H. Yoon**, Electron distributions observed with Langmuir waves in the plasma sheet boundary layer, *Phys. Plasmas* **21**, 092121 (2014); doi: 10.1063/1.4896716.
223. M. J. Michno, M. Lazar, **P. H. Yoon**, and R. Schlickeiser, Effects of electrons on the solar wind proton temperature anisotropy, *Astrophys. J.* **781**, 49 (2014); doi: 10.1088/0004-637X/781/1/49.
224. M. N. S. Qureshi, W. Nasir, W. Masood, **P. H. Yoon**, H. A. Shah, and S. J. Schwartz, Terrestrial lion roars and non-Maxwellian distribution, *J. Geophys. Res.* **119**, 10,059-10,067 (2014); doi:10.1002/2014JA020476.
225. R. Schlickeiser and **P. H. Yoon**, On the marginal instability threshold condition of the aperiodic ordinary mode, *Phys. Plasmas* **21**, 072119 (2014); doi: 10.1063/1.4890463.
226. R. Schlickeiser and **P. H. Yoon**, Quasilinear theory of general electromagnetic fluctuations in unmagnetized plasmas, *Phys. Plasmas* **21**, 092102 (2014); doi: 10.1063/1.4893147.
227. J. Seough, **P. H. Yoon**, and J. Hwang, Quasilinear theory and particle-in-cell simulation of proton cyclotron instability, *Phys. Plasmas* **21**, 062118; doi: 10.1063/1.4885359 (2014).
228. S. Vafin, R. Schlickeiser and **P. H. Yoon**, Marginal instability threshold condition of the aperiodic ordinary mode in equal-mass plasmas, *Phys. Plasmas* **21**, 104504 (2014); doi: 10.1063/1.4897373.
229. C. S. Wu, **P. H. Yoon**, and C. B. Wang, Ion temperature in plasmas with intrinsic Alfvén waves, *Phys. Plasmas* **21**, 104507 (2014); doi: 10.1063/1.4897376.
230. L. F. Ziebell, **P. H. Yoon**, F. J. R. Simões Jr., R. Gaelzer, and J. Pavan, Spontaneous emission of electromagnetic radiation in turbulent plasmas, *Phys. Plasmas* **21**, 010701 (2014); doi:10.1063/1.4861619.
231. L. F. Ziebell, **P. H. Yoon**, R. Gaelzer, and J. Pavan, Transition from thermal to turbulent equilibrium with a resulting electromagnetic spectrum, *Phys. Plasmas* **21**, 012306 (2014); doi:10.1063/1.4863453.
232. L. F. Ziebell, **P. H. Yoon**, R. Gaelzer, and J. Pavan, Plasma emission by weak turbulence processes, *Astrophys. J. Lett.* **795**, L32 (2014); doi: 10.1088/2041-8205/795/2/L32.

²³Astronomical Society of the Pacific Conference Series

• **2015**

233. **P. H. Yoon**, Kinetic theory of turbulence for parallel propagation revisited: Formal results, *Phys. Plasmas* **22**, 082309 (2015); doi: 10.1063/1.4928446.
234. **P. H. Yoon**, Kinetic theory of turbulence for parallel propagation revisited: Low-to-intermediate frequency regime, *Phys. Plasmas* **22**, 092307 (2015); doi: 10.1063/1.4930205.
235. **P. H. Yoon**, Kinetic theory of weak turbulence in magnetized plasmas: Perpendicular propagation, *Phys. Plasmas* **22**, 082310 (2015); doi: 10.1063/1.4928380.
236. **P. H. Yoon**, Solar wind electron energization by plasma turbulence, *J. Phys. Conf. Ser.*,²⁴ **642**, 012030 (2015); doi: 10.1088/1742-6596/642/1/012030.
237. **P. H. Yoon**, S. Kim, and G. S. Choe, Steady-state model of solar wind electrons revisited, *Astrophys. J.* **812**, 169 (2015); doi: 10.1088/0004-637X/812/2/169.
238. **P. H. Yoon**, J. Seough, J. Hwang, and Y. Nariyuki, Macroscopic quasi-linear theory and particle-in-cell simulation of Helium-ion anisotropy instabilities, *J. Geophys. Res.* **120**, 6071 (2015); doi: 10.1002/2015JA021495.
239. R. Gaelzer, **P. H. Yoon**, S. Kim, and L. F. Ziebell, On the dimensionally correct kinetic theory of turbulence for parallel propagation, *Phys. Plasmas* **22**, 032310 (2015); doi: 10.1063/1.4916054.
240. F. Hadi, **P. H. Yoon**, and A. Qamar, Ordinary mode instability associated with thermal ring distribution, *Phys. Plasmas* **22**, 022112 (2015); doi: 10.1063/1.4907657.
241. S. Kim, **P. H. Yoon**, G. S. Choe, and L. Wang, Asymptotic theory of solar wind electrons, *Astrophys. J.* **806**, 32 (2015); doi: 10.1088/0004-637X/806/1/32.
242. W. Masood, M. N. S. Qureshi, **P. H. Yoon**, and H. A. Shah, Nonlinear kinetic Alfvén waves with non-Maxwellian electron population in space plasmas, *J. Geophys. Res.* **120**, 101-112 (2015); doi: 10.1002/2014JA020459.
243. R. Schlickeiser and **P. H. Yoon**, Kinetics of general electromagnetic fluctuations in unmagnetized plasmas: Aperiodic thermal noise, *Plasma Phys. Control. Fusion* **57**, 014013 (2015); doi:10.1088/0741-3335/57/1/014013.
244. R. Schlickeiser and **P. H. Yoon**, Electromagnetic fluctuations in magnetized plasmas I: The rigorous relativistic kinetic theory, *Phys. Plasmas* **22**, 072108 (2015); doi: 10.1063/1.4926828.
245. R. Schlickeiser, A. Ganz, U. Kolberg, and **P. H. Yoon**, Electromagnetic fluctuations in magnetized plasmas II: Extension of the theory for parallel wave vectors, *Phys. Plasmas* **22**, 102111 (2015); doi: 10.1063/1.4933210.
246. J. Seough, **P. H. Yoon** and J. Hwang, Simulation and quasilinear theory of proton firehose instability, *Phys. Plasmas* **22**, 012303 (2015); doi: 10.1063/1.4905230.
247. J. Seough, **P. H. Yoon**, J. Hwang, and Y. Nariyuki, Simulation and quasilinear theory of aperiodic ordinary mode instability, *Phys. Plasmas* **22**, 082122 (2015); doi: 10.1063/1.4928556.
248. J. Seough, Y. Nariyuki, **P. H. Yoon**, and S. Saito, Strahl formation in the solar wind electrons via whistler instability, *Astrophys. J. Lett.* **811**, L7 (2015); doi: 10.1088/2041-8205/811/1/L7.
249. A. Stockem Novo, **P. H. Yoon**, M. Lazar, R. Schlickeiser, S. Poedts, J. Seough, and L. O. Silva, Quasilinear saturation of the aperiodic ordinary mode streaming instability, *Phys. Plasmas* **22**, 092301 (2015); doi: 10.1063/1.4929852.
250. S. Vafin, R. Schlickeiser, and **P. H. Yoon**, Linear theory of low frequency magnetosonic instabilities in counterstreaming bi-Maxwellian plasmas, *Phys. Plasmas* **22**, 092131 (2015); doi: 10.1063/1.4932004.
251. C. S. Wu, **P. H. Yoon**, and C. B. Wang, A theory of heating of solar coronal plasma, *Phys. Plasmas* **22**, 032901 (2015); doi: 10.1063/1.4913579.
252. L. F. Ziebell, **P. H. Yoon**, R. Gaelzer, and J. Pavan, Plasma emission by nonlinear electromagnetic processes, *Astrophys. J.* **806**, 237 (2015); doi: 10.1088/0005-637X/806/2/237.

²⁴Journal of Physics: Conference Series

253. K. Zubia, H. A. Shah, and **P. H. Yoon**, Dust heating by Alfvén waves using non-Maxwellian distribution function, *Phys. Plasmas* **22**, 082902 (2015); doi: 10.1063/1.4928568.

• **2016**

254. **P. H. Yoon**, Collisional relaxation of bi-Maxwellian plasma temperatures in magnetized plasmas, *Phys. Plasmas* **23**, 072114 (2016); doi: 10.1063/1.4958813.
255. **P. H. Yoon**, Proton temperature relaxation in the solar wind by combined collective and collisional processes, *J. Geophys. Res.* **121**, 10,665-10,676 (November) (2016); doi: 10.1002/2016JA023044.
256. **P. H. Yoon**, On the isotropization of solar wind protons, *Astrophys. J.* **833**, 106 (2016); doi: 10.3847/1538-4357/833/1/106.
257. **P. H. Yoon**, S. Kim, G. S. Choe, and Y.-J. Moon, Revised model of the steady-state solar wind halo electron velocity distribution function, *Astrophys. J.* **826**, 204 (2016); doi: 10.3847/0004-637X/826/2/204.
258. **P. H. Yoon**, L. F. Ziebell, E. Kontar, and R. Schlickeiser, Weak turbulence theory for collisional plasmas, *Phys. Rev. E* **93**, 033203 (2016); doi: 10.1103/PhysRevE.93.033203.
259. **P. H. Yoon**, J. LaBelle, and A. T. Weatherwax, Right-hand polarized $4f_{ce}$ auroral roar emissions 2. Nonlinear generation theory, *J. Geophys. Res.* **121**, 7981-7987 (2016); doi: 10.1002/2016JA022889.
260. T. Aziz, W. Masood, M. N. S. Qureshi, H. A. Shah, and **P. H. Yoon**, Linear and nonlinear coupling of electromagnetic and electrostatic fluctuations with one dimensional trapping of electrons using product bi (r, q) distribution, *Phys. Plasmas* **23**, 062307 (2016); doi: 10.1063/1.4953428.
261. M. C. Broughton, J. LaBelle, E.-H. Kim, **P. H. Yoon**, J. R. Johnson, and I. H. Cairns, On the propagation and mode conversion of auroral medium frequency bursts, *J. Geophys. Res.* **121**, 1706-1721 (2016); doi:10.1002/2015JA021851.
262. C.-R. Choi, M.-H. Woo, K. Dokgo, K.-W. Min, D.-Y. Lee, **P. H. Yoon**, J. Hwang, J.-J. Lee, and Y.-D. Park, Ion temperature anisotropy due to perpendicular heating by Alfvén wave propagating along magnetic field lines, *Phys. Plasmas* **23**, 092903 (2016); doi: 10.1063/1.4963389.
263. E. C. Fonseca-Pongutá, L. F. Ziebell, R. Gaelzer, and **P. H. Yoon**, Two dimensional kinetic analysis of electrostatic harmonic plasma waves, *Phys. Plasmas* **23**, 062310 (2016); doi: 10.1063/1.4953898.
264. S. Kim, **P. H. Yoon**, and G. S. Choe, Spontaneous emission of electromagnetic and electrostatic fluctuations in magnetized plasmas: Quasi-parallel modes, *Phys. Plasmas* **23**, 022111 (2016); doi: 10.1063/1.4941707.
265. S. Kim, **P. H. Yoon**, G. S. Choe, and Y. J. Moon, Suprathermal solar wind electrons and Langmuir turbulence, *Astrophys. J.* **828**, 60 (2016); doi: 10.3847/0004-637X/828/1/60 (2016 September 1).
266. U. Kolberg, R. Schlickeiser, and **P. H. Yoon**, On the beam induced quasi-instability transformation of the damped aperiodic mode in the intergalactic medium, *Astrophys. J.* **817**, 159 (2016); doi:10.3847/0004-637X/817/2/159 (2016 February 1).
267. M. Lazar, H. Fichtner, and **P. H. Yoon**, On the interpretation and applicability of κ -distributions, *Astron. & Astrophys.*, **589**, A39 (2016); DOI: 10.1051/0004-6361/201527593.
268. J. D. Menietti, **P. H. Yoon**, D. Pisa, S.-Y. Ye, O. Santolik, C. S. Arridge, D. A. Gurnett, and A. J. Coates, Source region and growth analysis of narrowband Z -mode emission at Saturn, *J. Geophys. Res.* **121**, 11,929-11,942 (2016); doi: 10.1002/2016JA022913 (December 2016).
269. M. Sarfraz, S. Saeed, **P. H. Yoon**, G. Abbas, and H. A. Shah, Macroscopic quasilinear theory of electromagnetic electron cyclotron instability associated with core and halo solar wind electrons, *J. Geophys. Res.* **121**, 9356-9368 (2016); doi: 10.1002/2016JA022854.
270. S. F. Tigik, L. F. Ziebell, **P. H. Yoon**, and E. P. Kontar, Two-dimensional time evolution of beam-plasma instability in the presence of binary collisions, *Astron. & Astrophys.*²⁵ **586**, A19 (2016); doi: 10.1051/0004-6361/201527271.

²⁵Astronomy & Astrophysics

271. S. F. Tigik, L. F. Ziebell, and **P. H. Yoon**, Collisional damping rates for plasma waves, *Phys. Plasmas* **23**, 064504 (2016); doi: 10.1063/1.4953802.
272. S. Vafin, R. Schlickeiser, and **P. H. Yoon**, Electromagnetic fluctuation spectrum in magnetized Maxwellian plasmas for parallel wave vectors, *Phys. Plasmas* **23**, 052106 (2016); doi: 10.1063/1.4948622.
273. S. Vafin, R. Schlickeiser, and **P. H. Yoon**, Electromagnetic fluctuation spectra of collective oscillations in magnetized Maxwellian equal mass plasmas for low-frequency waves, *Phys. Plasmas* **23**, 052117 (2016); doi: 10.1063/1.4951026.
274. S. Vafin, R. Schlickeiser, and **P. H. Yoon**, Amplification of collective magnetic fluctuations in magnetized bi-Maxwellian plasmas for parallel wave vectors. I. Electron-proton plasma, *Astrophys. J.* **829**, 41 (2016); doi: 10.3847/0004-637X/829/1/41.
275. L. F. Ziebell, L. Petruzzellis, **P. H. Yoon**, R. Gaelzer, and J. Pavan, Plasma emission by counter-streaming electron beams, *Astrophys. J.* **818**, 61 (2016); doi: 10.3847/0004-637X/818/1/61.
- **2017**
276. **P. H. Yoon** and R. A. López, Spontaneous emission of electromagnetic fluctuations in magnetized plasmas, *Phys. Plasmas* **24**, 022117 (2017); doi: 10.1063/1.4976321.
277. **P. H. Yoon** and R. A. López, Erratum: “Spontaneous emission of electromagnetic fluctuations in magnetized plasmas” [Phys. Plasmas 24, 022117 (2017)], *Phys. Plasmas* **24**, 049902 (2017); doi: 10.1063/1.4980857.
278. **P. H. Yoon** and M. Sarfraz, Interplay of electron and proton instabilities in expanding solar wind, *Astrophys. J.* **835**, 246 (2017), February 1, doi: 10.3847/1538-4357/835/2/246.
279. **P. H. Yoon**, S. Kim, J. Hwang, and D. K. Shin, Upper-hybrid waves and energetic electrons in the radiation belt, *J. Geophys. Res.*, **122**, (2017); doi: 10.1002/2016JA023321.
280. **P. H. Yoon**, R. A. López, S. Vafin, S. Kim, and R. Schlickeiser, Spontaneous emission of Alfvénic fluctuations, *Plasmas Phys. Contr. Fusion* **59**, 095002 (8pp) (2017); doi: 10.1088/1361-6587/aa77c3.
281. J. Hwang, D. K. Shin, **P. H. Yoon**, W. S. Kurth, B. A. Larsen, G. D. Reeves, and D. Y. Lee, Roles of hot electrons in generating upper-hybrid waves in the earth’s radiation belt, *Phys. Plasmas* **24**, 062904 (2017); doi: 10.1063/1.4984249.
282. H. P. Kim, J. Seough, J. Hwang, and **P. H. Yoon**, Electron temperature anisotropy regulation by whistler instability, *J. Geophys. Res.* **122**, 4410-4419 (2017); doi: 10.1002/2016JA023558.
283. M. Lazar, **P. H. Yoon**, and B. Eliasson, Electromagnetic cyclotron instabilities in bi-Kappa distributed plasmas: a quasilinear approach, *Phys. Plasmas* **24**, 042110 (2017); doi: 10.1063/1.4979903.
284. S. Saeed, M. Sarfraz, **P. H. Yoon**, M. Lazar, and M. N. S. Qureshi, Electron heat flux instability, *Mon. Not. Roy. Astron. Soc.*²⁶ **465**, 1672-1681 (2017); doi: 10.1093/mnras/stw2900.
285. S. Saeed, M. Sarfraz, **P. H. Yoon**, and M. N. S. Qureshi, Characteristics of heat flux and electromagnetic electron-cyclotron instabilities driven by solar wind electrons, *Mon. Not. Roy. Astron. Soc.* **466**, 4928-4936 (2017); doi: 10.1093/mnras/stx049.
286. M. Sarfraz, S. Saeed, **P. H. Yoon**, G. Abbas, and H. A. Shah, Macroscopic quasilinear theory of parallel electron firehose instability associated with solar wind electrons, *Phys. Plasmas* **24**, 012907 (2017); doi: 10.1063/1.4975007.
287. M.-H. Woo, K. Dokgo, **P. H. Yoon**, D.-Y. Lee, and C. R. Choi, Electron Bernstein-Greene-Kruskal hole for obliquely propagating solitary kinetic Alfvén waves, *Phys. Plasmas* **24**, 042903 (2017); doi: 10.1063/1.4979905.
- **Articles accepted for publication or in press**
288. **P. H. Yoon**, Weak turbulence theory for beam-plasma interaction, *Phys. Plasmas*, accepted (2017).

²⁶Monthly Notices of the Royal Astronomical Society

289. **P. H. Yoon**, Kinetic instabilities in the solar wind driven by temperature anisotropies, *Rev. Mod. Plasma Phys.*²⁷, accepted (2017); Doi: 10.1007/s41614-017-0006-1.
290. **P. H. Yoon**, Turbulent equilibria for charged particles in space, *J. Phys. Conf. Ser.*, accepted (2017).
291. U. Kolberg, R. Schlickeiser, and **P. H. Yoon**, Velocity fluctuations driven by the damped aperiodic mode in the intergalactic medium, *Astrophys. J.*, accepted (2017).
292. R. A. López and **P. H. Yoon**, Simulation of electromagnetic fluctuations in thermal magnetized plasma, *Plasma Phys. Contr. Fusion*, accepted (2017).
293. R. A. López, A. F. Viñas, J. A. Araneda, and **P. H. Yoon**, Kinetic scale structure of low-frequency waves and fluctuations, *Astrophys. J.*, accepted (2017).
294. N. Noreen, **P. H. Yoon**, R. A. López and S. Zaheer, Electron contribution in mirror instability in quasilinear regime, *J. Geophys. Res.*, accepted (2017).

• **Articles submitted for publication**

295. **P. H. Yoon**, R. Schlickeiser, S. Kim, and R. A. López, On the equilibrium between proton kappa distribution and compressible kinetic Alfvénic fluctuations, *Astron. Astrophys.*, submitted (2017).
296. **P. H. Yoon**, N. Noreen, and S. Zaheer, Quasilinear evolution of temperature anisotropy instabilities in low beta plasmas, *Mon. Not. Roy. Astron. Soc.*, submitted (2017).
297. K. Dokgo, K.-W. Min, C.-R. Choi, M.-H. Woo, **P. H. Yoon**, and K.-J. Hwang, Nonlinear evolution of large amplitude oblique whistler waves, *Geophys. Res. Lett.*, submitted (2017).
298. S. Kim, R. Schlickeiser, **P. H. Yoon**, R. A. López, and M. Lazar, Spontaneous emission of electromagnetic fluctuations in suprathermal plasmas, *Plasma Phys. Contr. Fusion*, submitted (2017).
299. M. Lazar, **P. H. Yoon**, R. A. López, and Š. Stverák, Electromagnetic electron cyclotron instability in the solar wind, *J. Geophys. Res.*, to be submitted (2017).
300. N. Noreen, **P. H. Yoon**, and S. Zaheer, Cyclotron instabilities driven by temperature anisotropy in low beta plasmas, *Mon. Not. Roy. Astron. Soc.*, submitted (2017).
301. J. Seough, R. A. López, **P. H. Yoon**, and M. Sarfraz, Particle-in-cell simulation and macroscopic quasilinear theory of parallel electron firehose instability, *Phys. Plasmas*, to be submitted (2017).
302. S. F. Tigik, L. T. Petruzzellis, L. F. Ziebell, **P. H. Yoon**, and R. Gaelzer, Weak turbulence analysis of wave spectra in plasmas containing a population of particles with power-law velocity distributions, *Phys. Rev. E.*, submitted (2017).

– Unrefereed Review Articles and Conference Proceedings –

1. **P. H. Yoon**, Acceleration of freshly created ions by the solar wind via wave-particle interactions, in *Collective Acceleration in Collisionless Plasmas*, edited by D. Le Quéau, A. Roux, and D. Gresillon, Les Editions de Physique, Les Ulis-Cédex, pp. 59-85 (1991).
2. **P. H. Yoon**, Auroral kilometric radiation and cyclotron maser instability, in *Physics of Space Plasmas (1992)*, *SPI Conference Proceedings and Reprint Series, No. 12*, edited by T. Chang, Scientific Publishers, Inc., Cambridge, pp. 331-345 (1992).
3. **P. H. Yoon**, Nonlinear Analysis of Generalized Cross-Field Current Instability in the Geomagnetic Tail, in *Anais do Seminário – SuperComp 94 – Seminário de Supercomputação Aplicada*, edited by M. T. Longhi, M. R. Longhi Jr., and R. Teodorowitsch, UFRGS Press, Porto Alegre, Brazil, pp. 197-200 (1994).
4. **P. H. Yoon**, A. T. Weatherwax, T. J. Rosenberg, and J. LaBelle, Terrestrial F-region cyclotron maser theory, in *Planetary Radio Emissions IV, Proc. 4th International Workshop*, edited by H. O. Rucker and S. J. Bauer, Österreichischen Akademie der Wissenschaften, Vienna, Austria, pp. 293-297 (1996).

²⁷Reviews of Modern Plasma Physics

5. **P. H. Yoon**, and A. T. Y. Lui, Cross-field current instability and substorm expansion onset, in *Proc. 4th International Conference on Substorms*, edited by Y. Kamide, Terra Scientific Publishing Co., Tokyo, Japan, pp. 387-390 (1998).
6. **P. H. Yoon**, AKR fine structure as multi-scale wave-particle interaction, in *Physics of Space Plasmas (1998), SPI Conference Proceedings and Reprint Series, No. 15*, edited by T. Chang, Scientific Publishers, Inc., Cambridge, pp. 369-374 (1998).
7. **P. H. Yoon**, and A. T. Y. Lui, Cross-field current stability of Harris equilibrium, in *Proc. Fifth International Conference on Substorms*, edited by A. Wilson, ESA Publications Division, Noordwijk, The Netherlands, pp. 221-224 (2000).
8. **P. H. Yoon**, Drift instabilities in current sheet, in *Proc. Sixth International Conference on Substorms*, edited by R. M. Winglee, University of Washington Press, Seattle, pp. 181-188 (2002).

– **Contributions to Book and Monograph Chapters** –

1. **P. H. Yoon** and G. Livadiotis, Nonlinear wave-particle interaction and electron kappa distributions, in *Kappa Distributions. 1st Edition. Theory and Applications in Plasmas*, edited by G. Livadiotis (Elsevier). Publication date: 21st April, 2017. ISBN: 9780128046388.

– **Books and Monographs Authored or Edited** –

1. **P. H. Yoon**, *Classical Kinetic Theory of Weakly Turbulent Nonlinear Plasma Processes* (Cambridge University Press: Cambridge), in preparation (target publication date 2017).

INVITED TALKS (2008 - Present)

P. H. Yoon has not kept the entire record of past invited talks, but the list of invited talks since 2008 is given below. He does not keep the record of contributed papers in various conferences as it is too lengthy. He also organized various conference sessions and served chairpersons in scientific conferences and meetings, but he does not keep such a record either.

2008

- Title of invited talk: *Discrete Upper-Hybrid Waves*
Conference Information: URSI, National Radio Science Meeting, Boulder, Colorado, January 3-6, 2008
- Title of invited talk: *On the Kinetic Theory of Solar Wind Turbulence*
Conference Information: First Workshop on Laboratory, Space/Astrophysical Plasma, Pohang, Korea, February 14-15, 2008
- Title of invited talk: *Turbulent Acceleration of Electron Kappa Distribution*
Conference Information: European Geosciences Union General Assembly 2008, Vienna, Austria, April 13-18, 2008
- Title of invited talk: *Kinetic Turbulence Theory for Magnetized Plasmas*
Conference Information: The Seventh International Workshop on Nonlinear Waves and Turbulence in Space Plasmas (NLW-7), Beaulieu, France, April 21-25, 2008
- Title of invited talk: *Anomalous Resistivity and Turbulent Transport of Momentum and Energy*
Conference Information: Asia Oceania Geosciences Society General Assembly, Busan, Korea, June 16-20, 2008

2009

- Title of invited talk: *Nonlinear Theory of Ion-Cyclotron Instability*
Venue Information: Space Plasma Seminar, University of Iowa, Iowa City, IA, May 22, 2009

- Title of invited lecture: *Tutorial on the Theory of Plasma Turbulence (Part I)*
Meeting Information: Summer College on Plasma Physics, Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, August 17-21, 2009
- Title of invited lecture: *Tutorial on the Theory of Plasma Turbulence (Part II)*
Meeting Information: Summer College on Plasma Physics, Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, August 17-21, 2009
- Title of invited talk: *Particle Energization in the Solar Corona and Solar Wind*
Conference Information: Korean Astronomical Society Fall Meeting, Pyongchang, Korea, October 7-9, 2009
- Title of invited talk: *Non-Extensive Entropy or Turbulent Quasi-Equilibrium for Space Plasmas*
Venue Information: Physics Colloquium, Aju University, Korea, November 13, 2009, Suwon

2010

- Title of invited talk: *Integrating Effects of Cross-Field Current-Driven Instabilities in Fluid Models of Magnetic Reconnection*
Conference Information: Yosemite Workshop on Magnetic Reconnection, Yosemite Lodge, Yosemite, CA, February 8-12, 2010
- Title of invited talk: *Kinetic Theory of Turbulence in Magnetized Plasmas*
Conference Information: 9th Annual International Astrophysics Conference, Maui, HI, March 14-19, 2010
- Title of invited talk: *Non-Extensive Entropy or Turbulent Quasi-Equilibrium for Space Plasmas*
Venue Information: Space Science Seminar, Space Science Laboratory, University of Berkeley, Berkeley, CA, April 5-6, 2010
- Title of invited talk: *Non-Extensive Entropy or Turbulent Quasi-Equilibrium for Space Plasmas*
Venue Information: Cosmic Ray and Space Science Seminar, University of Maryland, College Park, MD, April 21, 2010
- Title of invited talk: *Non-Extensive Entropy, Turbulent Quasi-Equilibrium, and Super-Halo Solar Wind Electron Distribution*
Venue Information: Space Science Seminar, University of Science and Technology of China, Hefei, China, October 25-27, 2010

2011

- Title of invited talk: *Electromagnetic Fluctuation During Dipolarization Event*
Conference Information: Earth Sun System Exploration, Kona, HI, January 16-21, 2011
- Title of invited talk: *Turbulent Quasi-Equilibrium for Space Plasma*
Conference Information: 10th Annual International Astrophysics Conference, Maui, HI, March 13-18, 2011
- Title of invited talk: *Superthermal Electron Acceleration*
Conference Information: ISSI (International Space Science Institute), Bern, Switzerland, May 15-20, 2011
- Title of invited talk: *Tsallis Entropy, Turbulent Equilibrium, and Superhalo Solar Wind Electron Distribution*
Conference Information: SBF (Sociedade Brasileira de Física) Meeting, Foz do Iguaçu, Brazil, June 6-10, 2011
- Title of invited talk: *Turbulent Equilibrium, Superhalo Solar Wind Electron Distribution, and Nonextensive Entropy*
Conference Information: IAFA (International Astrophysics Forum Alpbach), Alpbach, Tyrol, Austria, June 20-24, 2011

- Title of invited talk: *Turbulent Acceleration of Quiet-Time Solar Wind Electrons*
Conference Information: 2011 International Space Plasma Symposium, Tainan, Taiwan, August 15-19, 2011
- Title of invited lecture: *Langmuir Turbulence and Solar Wind Electron Acceleration*
Venue Information: Plasma Seminar, Ruhr-Universität, Bochum, Germany, September 9-20, 2011
- Title of invited lecture: *Theoretical construction of proton temperature anisotropy-beta relations using quasilinear analysis of electromagnetic ion-cyclotron, mirror, and fire-hose instabilities*
Venue Information: Plasma Seminar, Ruhr-Universität, Bochum, Germany, September 9-20, 2011
- Title of invited talk: *Nonlinear turbulence theory for Buneman instability*
Conference Information: American Geophysical Union, San Francisco, CA, December 5-9, 2011

2012

- Title of invited talk: *Electron acceleration by Langmuir turbulence*
Conference Information: DOE Plasma Science Center Web Seminar, May 4, 2012
- Title of invited talk: *Proton Temperature Anisotropy-Beta Relationship in Space Plasmas*
Conference Information: The 39th IEEE International Conference on Plasma Science - ICOPS2012, Edinburgh, Scotland, UK, July 8-12, 2012
- Title of invited talk: *Energy Transformation by Magnetic Reconnection*
Conference Information: Asia Oceania Geophysical Society (AOGS) Meeting, Singapore, August 13-17, 2012
- Title of invited talk: *Large-Amplitude Whistler Waves and Relativistic Electron Acceleration*
Conference Information: Asia Oceania Geophysical Society (AOGS) Meeting, Singapore, August 13-17, 2012
- Title of invited lecture: *A New Theory of Plasma Emission*
Venue Information: Physics Colloquium, Dartmouth College, Hanover, NH, November 6, 2012
- Title of invited talk: *A New Theory of Plasma Emission*
Conference Information: 3rd World Class Institute (WCI) Symposium, KIST, Seoul, Korea, November 15, 2012
- Title of invited lecture: *Low-frequency instabilities in the solar wind*
Venue Information: COMSTECH Workshop on Plasma Science, Islamabad, Pakistan, November 19-21, 2012
- Title of invited lecture: *Plasma Kinetic Theory: General Description*
Venue Information: COMSTECH Workshop on Plasma Science, Islamabad, Pakistan, November 19-21, 2012
- Title of invited lecture: *Application of Weak Turbulence Theory to Solar Wind Electrons*
Venue Information: COMSTECH Workshop on Plasma Science, Islamabad, Pakistan, November 19-21, 2012

2013

- Title of invited talk: *Beam-Plasma Interaction and Langmuir Turbulence*
Conference Information: U.S. National Committee for International Union of Radio Science (USNC-URSI) National Radio Science Meeting, Boulder, CO, January 9-12, 2013
- Title of invited talk: *Large-amplitude oblique whistler waves and relativistic electron acceleration*
Conference Information: 10th International Nonlinear Wave and Chaos Workshop (NWCW13), La Jolla, San Diego, CA, March 3-8, 2013

- Title of invited talk: *Effects of Kinetic Instabilities in the Solar Wind Modeling*
Conference Information: 12th Annual International Astrophysics Conference, Myrtle Beach, SC, April 15-19, 2013
- Title of invited talk: *Microinstabilities, anomalous resistivity, and energy principle associated with current disruption and reconnection events*
Conference Information: 2013 International Conference on Storms, Substorms and Space Weather, November 3-7, 2013, Shenzhen, China

2014

- Title of invited talk: *Large-amplitude oblique whistler waves and relativistic electron acceleration*
Conference Information: URSI (International Union of Radio Science) National Radio Science Meeting, January 8-11, 2014, University of Colorado at Boulder
- Title of invited talk: *Nonlinear Processes in Space and Astrophysical Plasmas*
Conference Information: Symposium “New Trends in Plasma Theory”, January 16-17, 2014, Max Planck Institute for Plasma Physics, Garching, Germany
- Titles of invited lectures: *Lecture 1: Nonlinear Processes in Space Plasma I: General Concepts and Application*
Lecture 2: Nonlinear Processes in Space Plasma II: Electromagnetic Effects
Lecture 3: Nonlinear Processes in Space Plasma III: Magnetized Plasmas
Conference Information: International Scientific Spring, March 10-14, 2014, National Centre for Physics, Islamabad, Pakistan
- Titles of invited lectures: *Lecture 1: Fundamentals of Plasma Kinetic Theory*
Lecture 2: Kinetic Waves and Instabilities in Plasmas
Lecture 3: Quasilinear Theory and Applications
Meeting Information: Government University, Lahore, Pakistan, March 17-18, 2014
- Title of invited seminar: *Understanding the Origin of Non-Maxwellian Charged-Particle Distribution in Space*
Meeting Information: University of Maryland, College Park, Cosmic Ray and Space Physics Seminar, April 14, 2014
- Title of invited talk: *Kappa distribution of quiet-time solar wind electrons as turbulent quasi-equilibrium*
Meeting Information: SigmaPhi2014 - International Conference on Statistical Physics 2014, Sheraton Rhodes Hotel, Greece, 7-11 July 2014 <http://sigmaphysrv.polito.it/>
- Title of invited talk: *Nonlinear plasma processes in space*
Meeting Information: US-Korea Conference on Science, Technology and Entrepreneurship (UKC 2014), San Francisco Hyatt Regency, August 6-9, 2014
- Title of invited seminar: *Electromagnetic waves and turbulence in space plasmas*
Meeting Information: Seminars on Mathematical Physics, Southwest Research Institute, San Antonio, TX, October 20, 2014
- Titles of invited talks: *Talk: Whistler waves and electron acceleration/heating in the planetary magnetospheres and interplanetary medium*
Lecture: Plasma turbulence and particle acceleration
Meeting Information: 8th Korean Astrophysics Workshop on Astrophysics of High-Beta Plasma in the Universe, ShineVille Resort, Jeju Island, Korea, November 10-13, 2014
- Titles of invited talk: *Electron kappa distribution, quasi-thermal noise, and spontaneously-emitted electromagnetic fluctuations*
Meeting Information: American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014

2015

- Title of invited talk: *Plasma Emission by Nonlinear Electromagnetic Processes*
Seminar Information: University of Maryland Space and Cosmic Ray Seminar, March 9, 2015, University of Maryland, College Park
- Title of invited talk: *Solar Wind Electron Energization by Plasma Turbulence*
Conference Information: 14th Annual International Astrophysics Conference, April 20-24, 2015, Tampa Bay, Florida
- Title of invited lectures: *Fluctuation Theory for Magnetized Plasmas*
Lecture Information: Ruhr Universität Bochum, Germany, May 7 & 21, 2015, Bochum, Germany
- Title of invited colloquium: *Revisiting Type III Solar Radio Bursts*
Colloquium Information: Ruhr Universität Bochum, Germany, May 11, 2015, Bochum, Germany
- Title of invited colloquium: *Electron Acceleration and Radio Emission by Plasma Turbulence*
Colloquium Information: Max Planck Institute, Göttingen, Germany, May 12, 2015, Göttingen, Germany
- Title of invited talk: *Cross-field Current Instabilities*
Workshop Information: Magnetotail Reconnection Onset and Dipolarization Fronts: Scientific Workshop September 16-18, 2015, Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, USA
- Title of invited talk: *Nonlinear Processes in Space Plasmas*
Conference Information: The 138th Society of Geomagnetism and Earth, Planetary and Space Sciences (SGEPSS) Meeting, University of Tokyo, October 31 - November 3, 2015, Tokyo, Japan
- Title of invited seminar: *Spontaneous Thermal Fluctuations in Plasmas*
Seminar Information: University of Tokyo, November 4, 2015, Tokyo, Japan
- Title of invited colloquium: *Nonlinear Processes in Space Plasmas*
Colloquium Information: University of Science and Technology, Ulsan (UNIST), Korea, November 11, 2015, Ulsan, Korea

2016

- Title of invited talk: *On the Inter-Relationship of Theory and Simulation for Astrophysical Plasmas*
Seminar Information: Korean Astronomy and Space Institute (KASI), Daejeon, Korea, January 22, 2016
- Title of invited talk: *Theoretical Considerations in Modeling the Non-Thermal Properties of the Solar Wind Electrons*
Conference Information: 15th Annual International Astrophysics Conference, Cape Coral, Florida, USA, April 4-8, 2016
- Title of invited plenary lecture: *Nonlinear Kinetic Turbulence Theory*
Conference Information: 6th East-Asia School and Workshop on Laboratory, Space, and Astrophysical Plasmas, Tsukuba, Japan, Jul 11 - 16, 2016
- Title of invited talk: *Charged Particle Energization by Plasma Turbulence and Fluctuations*
Conference Information: 2016 Asia Oceania Geosciences Society (AOGS) Meeting, Beijing, China, Jul 31 - August 5, 2016
- Title of invited talk: *Linear and Nonlinear Theory of Upper-Hybrid Wave Excitation in the Auroral Ionosphere*
Conference Information: 2016 URIS Asia-Pacific Radio Science Conference (URSI AP-RASC 2016), Seoul, Korea, August 21 - August 25, 2016
- Title of invited talk: *Plasma Kinetic Theory With Applications to Contemporary Space Application*
Conference Information: The Brazilian Physical Society Meeting, Natal, Brazil, September 3 - 7, 2016

2017

- Title of invited talk: *On the Isotropization of Solar Wind Protons*
Seminar Information: Korean Astronomy and Space Institute (KASI), Daejeon, Korea, February 9, 2017
- Title of invited talk: *Turbulent Equilibria for Charged Particles in Space*
Conference Information: 16th Annual International Astrophysics Conference, Santa Fe, New Mexico, USA, March 6-10, 2017
- Title of invited talk: *Turbulent Equilibria for Charged Particles in Space*
Conference Information: Nonlinear Waves and Chaos Workshop, La Jolla, California, March 20-24, 2017
- Title of invited lecture: *On the isotropization of solar wind protons*
Lecture Information: Ruhr Universität Bochum, Germany, May 11, 2017
- Title of invited lecture: *Turbulent Equilibria for Charged Particles in Space*
Lecture Information: Ruhr Universität Bochum, Germany, May 24, 2017
- Title of invited talk: *Nonlinear Wave-Particle Interaction and Electron Kappa Distribution*
Conference Information: International Conference on Statistical Physics, Corfu, Greece, July 10-14, 2017

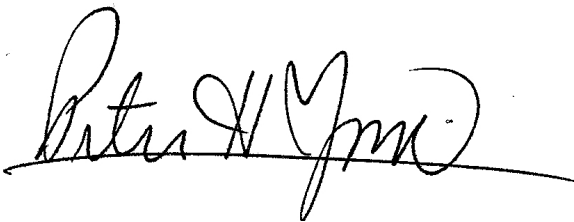
RESEARCH INTEREST, TEACHING EXPERIENCE AND SERVICES TO THE COMMUNITY

Yoon's scientific interests are diverse, which includes theoretical plasma physics, turbulence and nonlinear phenomena in plasmas, space and astrophysical plasma processes, magnetospheric and solar astrophysics. Over the many years as a research faculty, Yoon has led numerous research projects both as the Principle Investigator and Co-Principle Investigator. He carried out many research projects funded by the National Science Foundation (NSF), National Aeronautic and Space Administration (NASA), Air Force Office of Scientific Research (AFOSR), and Department of Energy (DOE), USA.

He served as referees for manuscripts submitted to numerous scientific journals, such as Nature, Physical Review Letters, Physics of Plasmas, Journal of Geophysical Research, Geophysical Research Letters, Journal of Physics, etc. He also served as the reviewer of proposals submitted to the US and foreign funding agencies, as associate editor and as a member of editorial board for scientific journals, and as external examiner of Ph.D. Theses from domestic as well as foreign Ph.D. candidates.

Yoon also has extensive international collaborations with a number of scientists from Brazil, Korea, Germany, Japan, China, Pakistan, and India. Yoon's primary duty at the University of Maryland is research. However, over the years, he advised or co-advised a number of Ph.D. students and young post-docs, both from the USA and abroad. From 2009 to 2013, Yoon developed and taught three courses at Kyung Hee University, Korea, which include, *Plasma Kinetic Theory*, *Advanced Plasma Kinetic Theory*, and *Radiations in Astrophysical Plasmas*, all the course notes of which are available online at <http://ssr.khu.ac.kr/korean/news/news06.php>.

This is to certify that the data in this document is accurate and current.



Peter H. Yoon, July 5, 2017.