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**Research  
Interests**

Physics of solar eruptions, solar radio bursts, particle acceleration

**Educational Background**

- 2001(9)-2004(2)      Predoctoral Fellow, Harvard-Smithsonian Center for Astrophysics (CfA)  
1997(9)-2004(4)      Ph.D. in Solar-Terrestrial Space Physics, Univ. Sci. & Technol. Of China (USTC)  
1993(9)-1997(7)      B. S. in Solar-Terrestrial Space Physics, USTC

**Employment History**

- 2013(7)-pres.      Executive Director, Institute of Space Sciences, Shandong University  
2007(2)-pres.      Professor, School of Space Science and Physics, Shandong Univ. at Weihai  
2005(4)-2005(7)      Visiting Scientist, SSP Division, Harvard-Smithsonian CfA  
2004(4)-2007(1)      Associate Professor, School of Earth and Space Science, USTC

**Teaching**

Introduction to Plasma Physics (2007-2012)

**Experience**

Introduction to Solar-Terrestrial Physics (2005, 2006)

**Professional  
Societies**

Regular member: AGU, AAS, COSPAR, AOGS  
Committee Member for Space Weather Science, Chinese Geophysical Society (2008 - ), Committee Member of AGU-CIP (Committee on International Participation, 2010-2014)

**Honors/Awards**

- 2017    Jeoujang Jaw Outstanding Young Science Award (Space Physics)  
2016    Youth Innovation Award in Space Weather Science and Technology  
2014    May-Fourth Youth Award (Nomination) of Shandong Province  
2012    Excellent Teacher Award, Bao Gang Education Foundation  
2012    Excellent Teacher Award, Shandong University  
2012    Fu Min Xing Lu Labour Award, Shandong Province  
2008    Basu Early Career Award in Sun-Earth systems Science, SPA/AGU  
2008    Supported by the NNSFC Grant for Outstanding Young Scholars  
2008    Youth Award in Science and Technology, Shandong Province  
2006    Elected in Program for New Century Excellent Talents in Universities, Ministry of Education of China

- 2006 Young Faculty Career Award, USTC Alumni Foundation
- 2006 Excellent Doctoral Dissertation Award of China
- 2005 Excellent Doctoral Dissertation Award, CAS
- 2001 QiuShi Scholarship for Graduate Students
- 2000 Award in Memory of C. C. Cheng, Beijing Astronomical Obs.

## Publications

### ➤ Book

1. **Elementary Plasma Physics**, Yao CHEN, Beijing: Science Press, 2019.07, 21.

### ➤ Papers Published in Academic Journals

- 2020-----
1. Ni S L., Chen Y., Li C Y., et al., Plasma emission induced by electron cyclotron maser instability in solar plasmas with a large ratio of plasma to gyrofrequency, *ApJL, Letters*, 891:L25 (8pp), 2020, <https://doi.org/10.3847/2041-8213/ab7750>.
  2. Zheng, R. S., Chen Y., and Wang B., The initiation of a solar streamer blowout coronal mass ejection arising from the streamer flank, *ApJL*, accepted, 2020.
- 2019-----
3. Guiping Ruan, Sonja Jejič, Brigitte Schmieder, Pierre Mein, Nicole Mein, Petr Heinzel, Stanislav Gunár, and Yao Chen, Diagnostics of the Prominence Plasma from H  $\alpha$  and MgII Spectral Observations, *The Astrophysical Journal*, 883:52 (17pp), 2019 September 20 <https://doi.org/10.3847/1538-4357/ab3657>
  4. Guiping Ruan, Sonja Jejič, Brigitte Schmieder, Pierre Mein, Nicole Mein, Petr Heinzel, Stanislav Gunár, and Yao Chen Diagnostics of the Prominence Plasma from H  $\alpha$  and MgII Spectral Observations, *The Astrophysical Journal*, 886:134 (14pp), 2019 December 1 <https://doi.org/10.3847/1538-4357/ab4b50>
  5. Xiangliang Kong (孔祥良), Fan Guo (郭帆), Chengcai Shen (沈呈彩), Bin Chen (陈彬), Yao Chen (陈耀), Sophie Musset, Lindsay Glesener, Peera Pongkitiwanchakul, and Joe Giacalone, THE ACCELERATION AND CONFINEMENT OF ENERGETIC ELECTRONS BY A TERMINATION SHOCK IN A MAGNETIC TRAP: AN EXPLANATION FOR NONTHERMAL LOOP-TOP SOURCES DURING SOLAR FLARES, Accepted by *ApJL*, 2019.
  6. H. Q. Song, J. Zhang, L. P. Li, Y. D. Liu, B. Zhu, B. Wang, R. S. Zheng, and Y. Chen, The Structure of Solar Coronal Mass Ejections in the Extreme-ultraviolet Passbands, *The Astrophysical Journal*, 887:124 (8pp), 2019 December 20
  7. H. Q. Song, J. Zhang, X. Cheng, L. P. Li, Y. Z. Tang, B. Wang, R. S. Zheng, and Y. Chen, On the Nature of the Bright Core of Solar Coronal Mass Ejections, *The Astrophysical Journal*, 883:43 (8pp), 2019 September 20 <https://doi.org/10.3847/1538-4357/ab304c>.
  8. Xiangliang Kong, Fan Guo, Yao Chen, and Joe Giacalone, The Acceleration of Energetic Particles at Coronal Shocks and Emergence of a Double Power-law Feature in Particle Energy Spectra, *The Astrophysical Journal*, 883:49 (12pp), 2019 September 20 <https://doi.org/10.3847/1538-4357/ab3848>.
  9. Hao Ning, Yao Chen\*, Jeongwoo Lee, Zhao Wu, Yang Su, Xiang-Liang Kong, Broken-up Spectra of the Loop-top Hard X-ray Source during a Solar Limb Flare, *Research in Astronomy and Astrophysics*, 2019, Res. Astron. Astrophys. 19 173
  10. Chuanyang Li, Yao Chen\*, Xiangliang Kong, M. Hosseinpour, and Bing Wang, Effect of

the temperature of background plasma and the energy of energetic electrons on Z-mode excitation, *The Astrophysical Journal*, 880:31 (10pp), 2019 July 20, <https://doi.org/10.3847/1538-4357/ab270f>.

11. 刘睿, 陈耀, 邓元勇, 丁明德, 季海生, 林隽, 田晖, 汪毓明, 汪景琇, 中国太阳物理学研究进展, 科学通报, 2019 年第64 卷第19 期: 2011 ~ 2024.
  12. 日冕磁场与等离子体综合探测望远镜, COroanal Magnetism and Plasma ASsembled Scopes(COMPASS), 屈中权, 黎辉, 钟悦, 梁昱, 宋智明, 章海鹰, 张红鑫, 陈耀, 田晖, 程鑫, 夏利东, 李波, 陈波, 闫晓理, 刘睿, 申成龙, 封莉, 侯俊峰, 李昊, 李臻 and 李少英, 中国科学: 物理学 力学 天文学 49, 059606 (2019); doi: 10.1360/SSPMA2018-00304.
  13. 杜清府, 程仁君, 陈昌硕, 李昕, 张军蕊, 冯士伟, 苏艳蕊, 陈耀, 严发宝, 太阳射电观测系统多通道变频电路一致性补偿方法与实现, 中国科学: 技术科学; doi: 10.1360/N092018-00408, <http://engine.scichina.com/doi/10.1360/N092018-00408>
  14. Ruisheng Zheng, Shuhong Yang, Changhui Rao, Yangyi Liu, Libo Zhong, Bing Wang, Hongqiang Song, Zhen Li, and **Yao Chen**, A Confined Partial Eruption of Double-decker Filaments, *The Astrophysical Journal*, Volume 875, Number 1
  15. Wang B, **Chen Y\***, Hu Q, et al. A method of forced extrapolation of the global magnetic field in the solar corona. *Sci China Tech Sci*, 2019, 62, <https://doi.org/10.1007/s11431-018-9470-y>
  16. Guang Lu, Wei Wang, Fabao Yan, Chao Diao, Xiachen Zhou, Zhao Wu, Fen Liu, Yong Sun, Guiqiang Du, and **Yao Chen**, Large Area Subwavelength Cavity Antenna with planar Metamaterials, *AIP Advances* 9, 025032 (2019), <https://doi.org/10.1063/1.5089666>
  17. Ruisheng Zheng, Zhike Xue, **Yao Chen**, Bing Wang, and Hongqiang Song, The Initial Morphologies of the Wavefronts of Extreme Ultraviolet Waves *The Astrophysical Journal*, 871:232 (9pp), 2019 February 1, <https://doi.org/10.3847/1538-4357/aaf9b0>.
  18. Zhao Wu, **Yao Chen\***, Hao Ning, and Xiangliang Kong, Gyrosynchrotron Emission Generated by Nonthermal Electrons with the Energy Spectra of a Broken Power Law, *The Astrophysical Journal*, 871:22 (11pp), 2019 January 20, <https://doi.org/10.3847/1538-4357/aaf474>
  19. V. Vasanth, **Yao Chen\***, Chuanyang Li, Shiwei Feng, and Guohui Du, Source Imaging of a Moving Type-IV Solar Radio Burst and its Role in Tracking Coronal Mass Ejection From the Inner to the Outer Corona, *The Astrophysical Journal*, 870:30 (11pp), 2019 January 1, <https://doi.org/10.3847/1538-4357/aaeffd>
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20. Koval, A., **Chen, Y.**, Stanislavsky, A., Kashcheyev, A., & Zhang, Q.-H. (2018). Simulation of focusing effect of traveling ionospheric disturbances on meter-decameter solar dynamic spectra. *Journal of Geophysical Research: Space Physics*, 123, 8940 – 8950, <https://doi.org/10.1029/2018JA025584>
  21. Mahboub Hosseinpour, **Yao Chen**, and Seiji Zenitani, On the effect of parallel shear flow on the plasmoid instability, *Physics of Plasmas* 25, 102117 (2018); doi: 10.1063/1.5061818
  22. Guiping Ruan, Brigitte Schmieder, Pierre Mein, Nicole Mein, Nicolas Labrosse, Stanislav Gunár, and **Yao Chen**, On the Dynamic Nature of a Quiescent Prominence Observed by IRIS and MSDP Spectrographs, *The Astrophysical Journal*, 865:123 (15pp), 2018 October 1 <https://doi.org/10.3847/1538-4357/aada08>

23. H. Q. Song, Z. J. Zhou, L. P. Li, X. Cheng, J. Zhang, **Y. Chen**, C. X. Chen, X. W. Ma, B. Wang, and R. S. Zheng, The Reversal of a Solar Prominence Rotation about Its Ascending Direction during a Failed Eruption, *The Astrophysical Journal Letters*, 864:L37 (6pp), 2018 September 10
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26. Ruisheng Zheng, **Yao Chen**, Shiwei Feng, Bing Wang, Hongqiang Song An extreme ultraviolet wave generating upward secondary waves in a streamer-like solar structure, *The Astrophysical Journal Letters*, 858:L1 (7pp), 2018 May 1, <https://doi.org/10.3847/2041-8213/aabe87>
27. Hong-Qiang Song, **Yao Chen**, Jiong Qiu, Chang-Xue Chen, Jie Zhang, Xin Cheng, Yuan-Deng Shen, and Rui-Sheng Zheng, *The Acceleration Process of a Solar Quiescent Filament in the Inner Corona*, *The Astrophysical Journal Letters*, 857:L21 (7pp), 2018 April 20, <https://doi.org/10.3847/2041-8213/aabcc3>
28. Hongyu Liu, **Yao Chen**, Kyungsuk Cho, Shiwei Feng, Veluchamy Vasanth, Artem Koval, Guohui Du, Zhao Wu, Chuanyang Li, A Solar Stationary Type IV Radio Burst and Its Radiation Mechanism, *Solar Phys* (2018) 293:58, <https://doi.org/10.1007/s11207-018-1280-y>
29. Shi Wei Feng, **Yao Chen**, C. Y. Li, B. Wang, Z. Wu, X. L. Kong, Q. F. Du, J. R. Zhang, G. Q. Zhao, Harmonics of Solar Radio Spikes at Metric Wavelengths, *Solar Phys* (2018) 293:39, <https://doi.org/10.1007/s11207-018-1263-z>.
30. Ning Hao, **Yao Chen\***, Zhao Wu, Yang Su, Hui Tian, Gang Li, Guohui Du, and Hongqiang Song, Two-stage energy release process of a confined flare with double HXR peaks, *the Astrophysical Journal*, 854:178 (12pp), 2018 February 20.
31. Zhenghua Huang, Lidong Xia, Chris J. Nelson, Jiajia Liu, Thomas Wiegmann, Hui Tian, James A. Klimchuk, **Yao Chen**, and Bo Li, Magnetic Braids in Eruptions of a Spiral Structure in the Solar Atmosphere, *The Astrophysical Journal*, 854:80 (13pp), 2018 February 20.

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32. Maoshui Lv, **Yao Chen\***, Chuanyang Li, et al., Sources of a multi-lane type-II solar radio burst on 5 Nov. 2014, *Sol Phys* (2017) 292: 194.
33. Xiangliang Kong, Fan Guo, Joe Giacalone, Hui Li, and **Yao Chen**, The acceleration of high-energy protons at coronal shocks: the effect of large-scale streamer-like magnetic field structures, *the Astrophysical Journal*, 851:38 (9pp), 2017 December 10
34. Qing-Fu Du, Lei Chen, Yue-Chang Zhao, Xin Li, Yan Zhou, Jun-Rui Zhang, Fa-Bao Yan, Shi-Wei Feng, Chuan-Yang Li, **Yao Chen**, A Solar Radio Dynamic Spectrograph with Flexible Temporal-spectral Resolution, *Research in Astronomy and Astrophysics*, 2017, 17, 098.
35. Hong-Qiang Song, Xin Cheng, **Yao Chen**, Jie Zhang, Bing Wang, Le-Ping Li, Bo Li, Qiang

- Hu, and Gang Li, The Three-Part Structure of A Filament-Unrelated Solar Coronal Mass Ejection, *The Astrophysical Journal*, 848:21 (7pp), 2017 October 10.
36. Artem Koval, **Yao CHEN**, Aleksander Stanislavsky, Qing-He Zhang, Traveling Ionospheric Disturbances as Huge Natural Lenses: Solar Radio Emission Focusing Effect, *J. Geophys. Res. Space Physics*, 122, doi:10.1002/2017JA024080.
  37. **Yao Chen\***, Zhao Wu, Wei Liu, Richard A. Schwartz, Di Zhao, Bing Wang and Guohui Du, Double Coronal X-ray and Microwave Sources Associated With A Magnetic Breakout Solar Eruption, *ApJ*, 843:8 (10pp), 2017 July 1.
  38. C.Y. Li, **Y. Chen\***, W. Bing, G.P. Ruan, S.W. Feng, G.H. Du, X.L. Kong, EUV and Magnetic Activities Associated with Type-I Solar Radio Bursts, *Solar Phys* (2017) 292:82, DOI 10.1007/s11207-017-1108-1.
  39. Ruisheng Zheng, **Yao Chen**, Bing Wang, Gang Li and Yongyuan Xiang, Interchange reconnection associated with a confined filament eruption: Implications for the source of transient cold-dense plasma in solar winds, *The Astrophysical Journal*, 840:3 (9pp), 2017.
  40. Hongqiang Song, **Yao Chen**, et al., The Origin of Solar Filament Plasma Inferred from in situ Observations of Elemental Abundances, *The Astrophysical Journal Letters*, 836:L11 (7pp), 2017.
  41. Ruisheng Zheng, Qingmin Zhang, **Yao Chen**, et al., Interaction of Two Filaments in a Long Filament Channel Associated with Twin Coronal Mass Ejections, *ApJ*, Volume 836, Issue 2, article id. 160, (9pp), 2017.
- 2016-----
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  43. V. Vasanth, **Yao Chen\***, Shiwei Feng, Suli Ma, Guohui Du, Hongqiang Song, Xiangliang Kong, and Bing Wang, An Eruptive Hot-Channel Structure Observed at Metric Wavelength as a Moving Type-IV Solar Radio Burst, *ApJL*, 830:L2 (8pp), 2016.
  44. Bing Wang, **Yao Chen\***, Jie Fu, Bo Li, Xing Li, and Wei Liu, Dynamics of a prominence-horn structure during its evaporation in the solar corona, *ApJL*, 827:L33, 2016.
  45. Shiwei Feng, **Yao Chen\***, Hongqiang Song, Bing Wang, and Xiangliang Kong, An imaging study of a complex solar coronal radio eruption, *ApJ*, 827, L9, 2016
  46. A.A. Koval, A.A. Stanislavsky, **Y. Chen**, S. W. Feng, A.A. Konovalenko, and Ya.S. Volvach, DECAMETER STATIONARY TYPE IV BURST IN IMAGING OBSERVATIONS ON THE 6TH OF SEPTEMBER 2014, *ApJ*, 826:125, 2016.
  47. Chunlin Tian, **Yao Chen**, Numerical simulations of Kelvin-Helmholtz instability: a two-dimensional parametric study, *The Astrophysical Journal*, 824:60 (10pp), 2016.
  48. Ruisheng Zheng, **Yao Chen**, and Bing Wang, Slipping Magnetic Reconnections with Multiple Flare Ribbons during an X-class Solar Flare, 823, 136, *ApJ*, 2016.
  49. H.Q. Song, Z. Zhong, **Y. Chen**, J. Zhang, X. Cheng, L. Zhao, Q. Hu, and G. Li, A Statistical Study of the Average Iron Charge State Distributions inside Magnetic Clouds for Solar Cycle 23, *The Astrophysical Journal Supplement Series*, 224 (2), article id. 27, 2016.
  50. **Yao Chen\***, Guohui Du, Di Zhao, Zhao Wu, Wei Liu, Bing Wang, Shiwei Feng, and Hongqiang Song, IMAGING A MAGNETIC-BREAKOUT SOLAR ERUPTION, *The Astrophysical Journal Letters*, 820:L37 (8pp), 2016.

51. Zhao Wu, **Yao Chen\***, Guangli Huang, Hiroshi Nakajima, Hongqiang Song, Victor Melnikov, Wei Liu, Gang Li, Kalugodu Chandrashekar, and Fangran Jiao, MICROWAVE IMAGING OF A HOT FLUX ROPE STRUCTURE DURING THE PRE-IMPULSIVE STAGE OF AN ERUPTIVE M7.7 SOLAR FLARE, *The Astrophysical Journal Letters*, 820:L29 (7pp), 2016
52. Xiangliang Kong, **Yao Chen**, Fan Guo, Shiwei Feng, Guohui Du, and Gang Li, Electron Acceleration at a Coronal Shock Propagating Through a Large-scale Streamer-like Magnetic Field, *The Astrophysical Journal*, 821:32 (12pp), 2016.
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56. Lulu Zhao, Gang Li, R. W. Ebert, M. A. Dayeh, M. I. Desai, G. M. Mason, Z. Wu, **Y. Chen**, Modeling transport of energetic particles in corotating interaction regions: A case study, *Journal of Geophysical Research: Space Physics*, Volume 121, Issue 1, pp.77-92, 2016.

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58. Guohui Du, Xiangliang Kong, **Yao Chen\***, Shiwei Feng, Bing Wang, and Gang Li, An observational revisit of band-split solar type-II radio bursts, 812:52, *ApJ*, 2015.
59. Hongqiang SONG, **Yao CHEN**, Jie ZHANG, Xin CHENG, Bing Wang, Qiang HU, Gang LI, and Yuming WANG, Evidence of the solar EUV hot channel as a magnetic flux rope from remote-sensing and in situ observations, *ApJL*, 2015.
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64. Xiangliang Kong, **Yao Chen\***, et al., The Possible Role of Coronal Streamer as Magnetically-closed Structures in Shock-induced Energetic Electrons and Metric Type II Radio Bursts, *ApJ*, 798:81, 2015, doi:10.1088/0004-637X/798/2/81/.

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65. Guohui Du, **Yao Chen\***, et al., Temporal spectral shift and polarization of a band-splitting solar type II radio burst, *ApJ Letters*, 2014, 793:L39 (5pp).
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69. Guiping Ruan, **Yao Chen\***, Shuo Wang, Hongqi Zhang, Gang Li, Ju Jing, Jiangtao Su, Xing Li, Hairong Xu, Haiming Wang, A solar eruption driven by rapid sunspot rotation, *ApJ*, 784:165, 2014.
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### **Invited Talks at International Conferences**

- 1)** Y. Chen, and Zh. Peng, Theoretical studies on heavy ions in the slow wind from quiescent streamer edges, COSPAR (D2.3/E3.3), Beijing, 2006.
- 2)** Y. Chen, S. J. Sun and Y. Q. Hu, Catastrophic eruption of magnetic flux rope in the corona and solar wind with and without magnetic reconnection, Session ST6-10 From CMEs to BBFs, the 4th Asia and Oceania Geophysics Society (AOGS) meeting, Bangkok, July 30—Aug 4, 2007.
- 3)** Y. Chen, Streamer activities: from blobs to blow-outs, The Third International Symposium On KuaFu Project (ISKP-III), Sept. 14-Sept. 19, 2008, Kunming.
- 4)** Y. Chen, Coronal Streamers and Associated Activities, The 2nd Asia-Pacific School on International Heliophysical Year, Oct. 20-Oct. 31, 2008, Beijing, China.
- 5)** Y. Chen, X. Li et al., Intrinsic Instability of Coronal Streamers: periodic releases of plasma blobs, EGU General Assembly, 19 - 24 April 2009, Vienna, Austria.
- 6)** Y. Chen et al., Contraction and coalescence of macroscopic magnetic islands and electron acceleration from STEREO observation, West Lake International Symposium on Plasma Simulation, April 18-20, Hangzhou, China, 2012.
- 7)** Y. Chen et al., CME-streamer Interaction and Its Implication on Particle Acceleration, AOGS – AGU (WPGM) Joint Assembly, Aug. 12-18, Resorts World Sentosa, Singapore, 2012.
- 8)** Y. Chen et al., Recent Studies on CME-streamer Interactions, AGU-Fall meeting, Dec. 3-7, San Francisco, CA, USA, 2012.
- 9)** Y. Chen et al., Recent studies on solar type II radio bursts, the AOGS 11th Annual Meeting in Sapporo, Japan on 28 July - 1 August, 2014.
- 10)** Y. Chen et al., A solar flux-rope filament eruption driven by rapid sunspot rotation, the AOGS 11th Annual Meeting in Sapporo, Japan on 28 July - 1 August, 2014.
- 11)** Y. Chen et al., Type-II radio bursts, the 13th Solar terrestrial Physics symposium (STP13) in Xian, China, October 12-18, 2014.

- 12) Yao Chen, Coronal HXR Double-source Structure Associated With A Magnetic Breakout Solar Eruption, the 2016 Asia Oceania Geosciences Society (AOGS) annual meeting, Beijing, China, July 2016.
- 13) Yao Chen, An Eruptive hot-channel structure observed at metric wavelength as a moving type-IV solar radio burst, The 14th Asia Oceania Geosciences Society (AOGS) annual meeting, Singapore, Aug. 6-11, 2017.
- 14) Yao Chen, Double Coronal X-ray and Microwave Sources, 7th East-Asia School and Workshop on Laboratory, Space, and Astrophysical Plasmas (EASW-7), Weihai, July 24 to July 29, 2017.
- 15) Yao Chen, Initiation and Energy Release Mechanism of Solar Coronal Mass Ejections (CMEs) and Associated Solar Radio Bursts, Invited Lecture (80 minutes), 8th East-Asia School and Workshop on Laboratory, Space, and Astrophysical Plasmas (EASW-8), Daejeon, South Korea, July 30 (Mon), 2018 ~ August 03 (Fri), 2018.
- 16) Yao Chen, V. Vasanth, Chuanyang Li, Observational Characteristics and Possible Emission Mechanism of Moving Type-IV Solar Radio Bursts, the 2nd Asia-Pacific Conference on Plasma Physics, Kanazawa, Japan 12-17 Nov. 2018.