

Curriculum Vitae & Publications

Education:

- **1987-1991:** B.Sc., Physics Department, Shandong University; Major: Theoretical Physics
- **1991-1994:** M.Sc., Institute of Chemistry, Shandong University; Major: Quantum Chemistry
- **1994-1997:** Ph.D., Center for Astrophysics, University of Science and Technology of China; Major: Astrophysics

Employment:

- **1997-1998:** Lecturer, Physics Department, Nanjing Normal University
- **1998-2000:** Postdoctoral Researcher, Astronomy Department, Nanjing University
- **2000-2002:** Postdoctoral Researcher, Max-Planck Institute of Radio Astronomy, Germany
- **2002-2003:** Postdoctoral Researcher, Center for Astrophysics, Harvard University, USA
- **2003-2005:** Postdoctoral Researcher, Physics Department, Purdue University, USA
- **2005-present:** Professor, Shanghai Astronomical Observatory (SHAO), Chinese Academy of Sciences, China
- **2008-2010:** Associate Director of Astrophysics Division, SHAO
- **2010-present:** Director of Astrophysics Division, SHAO

Research Interests

Black hole accretion, jet, active galactic nuclei, black hole X-ray binaries, AGN feedback and galaxy evolution, planet formation

Professional Services

- Referee: Science, ApJ, MNRAS, A&A, et al.
- Reviewer: NSF of China, NSF of USA, NRAO, et al.

Publication lists

- 95) Li, Y.P., Yuan, F., & Xie, F.G. Exploring the accretion model of M87 and 3C 84 with the Faraday rotation measure observations, 2016, ApJ, in press
- 94) Bu, D.F., **Yuan, F.**, Gan, Z. & Yang, X. Magneto-hydrodynamical Numerical simulation of wind production from black hole hot accretion flows at very large radii, 2016, ApJ, 823, 90
- 93) Gu, W.M., Sun, M.Y., Lu, Y.J., **Yuan, F.** & Liu, J.F., Thick Accretion Disk Model for Ultraluminous Supersoft Sources, 2016, ApJ, 818, L4
- 92) Bai, X., Ye, J., Goodman, J. & **Yuan, F.** Magneto-thermal disk wind from protoplanetary disks, 2016, ApJ, 818, 152
- 91) Bu, D. **Yuan, F.**, Gan, Z. & Yang, X. Hydrodynamical numerical simulation of wind production from black hole hot accretion flows at very large radii, 2016, ApJ, 818, 83
- 90) Mosallanezhad A., Bu, D.F., **Yuan, F.** Two-dimensional inflow-wind solution of black hole accretion with an evenly symmetric magnetic field, 2016, MNRAS, 456, 2877
- 89) Xie, F., **Yuan, F.** Interpreting the radio/X-ray correlation of black hole sources based on the accretion-jet model, 2016, MNRAS, 456, 4377
- 88) Yang, Q.X., Xie, F.G., **Yuan, F.**, Zdziarski, A.A., Gierlinski, M., Ho, L.C., Yu, Z., Accretion-jet model for the hard X-ray Gamma-Lx correlation in black hole X-ray binaries, 2015, PKAS, 30, 565-568
- 87) Mou, G.B. & **Yuan, F.** Gan, Z., Sun, M. The Accretion Wind Model of the Fermi Bubbles (II): Radiation, 2015, ApJ, 811, 37
- 86) Li, Y.P., **Yuan, F.**, Yuan, Q., Wang, Q. D., Chen, P. F., Neilsen, J., Fang, T., Zhang, S., Dexter, J. Statistics of X-ray flares of Sagittarius A*: evidence for solar-like self-organized criticality phenomenon, 2015, ApJ, 810, 19

- 85) Yang, Y., Li, Z.Y., Sjouwerman, L. O., Wang, Q. D., Gu, Q., Kraft, R. P., **Yuan, F.** Detection of a Compact Nuclear Radio Source in the Local Group Elliptical Galaxy M32, 2015, ApJ, 807, L19
- 84) **Yuan, F.**, Gan, Z.M., Narayan, R., Sadowski, A., Bu, D., & Bai, X.-N. Numerical Simulation of Hot Accretion Flows (III): Revisiting wind properties using trajectory approach, 2015, ApJ, 804, 101
- 83) Yang, Q.X., Xie, F.G., **Yuan, F.**, Zdziarski, A.A., Gierlinski, M., Ho, L.C., Yu, Z. Correlation between the photon index and X-ray luminosity of black hole X-ray binaries and active galactic nuclei: observations and interpretation, 2015, MNRAS, 447, 1692-1704
- 82) Li, Y.P., **Yuan, F.**, Wang, Q.D., Confronting the jet model of Sgr A* with the Faraday rotation measure observations, 2015, ApJ, 798, 22
- 81) Meng, Y., Lin, J., **Yuan, F.** Dynamics and collisions of episodic jets from black hole and accretion disk systems, 2015, RAA, 15, 207
- 80) Yang, G. Xue, Y.Q. et al. Photometric Redshifts in the Hawaii-Hubble Deep Field-North (H-HDF-N), 2014, ApJS, 215, 27
- 79) Mou, G.B., **Yuan, F.**, Bu, D., Sun, M. Su, M. Fermi Bubbles inflated by winds launched from the hot accretion flow in Sgr A*, 2014, ApJ, 790, 109
- 78) Gan, Z.M., **Yuan, F.**, Ostriker, J.P., Ciotti, L., Novak, G. Active galactic nucleus feedback in an isolated elliptical galaxy: the effect of strong radiative feedback in the kinetic mode, 2014, ApJ, 789, 150
- 77) Meng, Y., Lin, J., Zhang, L., Reeves, K.K., Zhang, Q.S., **Yuan, F.** An MHD model for magnetar giant flares, 2014, ApJ, 785, 62
- 76) Bu, D. **Yuan, F.** Does the circularization radius exist or not for low angular momentum accretion? 2014, MNRAS, 442, 917-920
- 75) **Yuan, F.**, Narayan, R. Hot Accretion Flows Around Black holes, 2014, ARA&A, 52, 529-88

- 74) Yang, X., **Yuan, F.**, Ohsuga, K., & Bu, D. 2014, Two-dimensional numerical simulations of supercritical accretion flows revisited, 2014, *ApJ*, 780, 79
- 73) 刘超, **袁峰**, 活动星系核外流的产生机制, 2013, *天文学进展*, 31, 479
- 72) Wang, Q.D., Novak, M.A., Markoff, S.B., Baganoff, F.K., Nayakshin, S., **Yuan, F.**, J. Cuadra, J., Davis, J., Dexter, J., Fabian, A.C., Grosso, N., Haggard, D., Houck, J., Ji, L., Li, Z., Neilsen, J., Porquet, D., Ripple, F., Shcherbakov, R.V., Dissecting X-ray-Emitting Gas Around the Center of Our Galaxy, 2013, *Science*, 341, 981
- 71) Liu, C., **Yuan, F.**, Ostriker, J., Gan, Z., & Yang, X. Radiation-driven outflow in active galactic nuclei: the feedback effects of scattered and reprocessed photons, 2013, *MNRAS*, 434, 1721-1735
- 70) Bu, D., **Yuan, F.** Wu, M., & Cuadra, J. On the role of initial and boundary conditions in numerical simulations of accretion flows, 2013, *MNRAS*, 434, 1692-1701
- 69) Luo, S., **Yuan, F.** Global neutrino heating in hyperaccretion flows, 2013, *MNRAS*, 431, 2362
- 68) Bu, D., Shang, H. & **Yuan, F.** *The effects of viscosity on the circumplanetary disks*, 2013, *RAA*, 13, 71-86
- 67) **Yuan, F.**, Bu, D., & Wu, M. *Numerical Simulation of Hot Accretion Flows (II): Nature, Origin, and Properties of Outflow and Their Possible Observational Applications*, 2012, *ApJ*, 761, 130
- 66) **Yuan, F.**, Wu, M. & Bu, D. *Numerical Simulation of Hot Accretion Flows (I): A Large Radial Dynamical Range and the Density Profile of Accretion Flow*, 2012, *ApJ*, 761, 129
- 65) Xie, F. & **Yuan, F.** *The radiative efficiency of hot accretion flows*, 2012, *MNRAS*, 427, 1580
- 64) **Yuan, F.** & Zhang, B. *Episodic Jets as the Central Engine of Gamma-Ray Bursts*, 2012, *ApJ*, 757, 56-60

- 63) Yang, X. **Yuan, F.** *A multidimensional radiation magnetohydrodynamics code with flux-limited diffusion*, 2012, **PASJ**, 64, 69-78
- 62) Zdziarski, A.A., Sikora, M., Dubus, G., **Yuan, F.** et al. *The gamma-ray emitting region of the jet in Cyg X-3*, 2012, **MNRAS**, 421, 2956-2968
- 61) **Yuan, F.** & Li, M. *AGNs feedback at sub-parsec scale*, 2011, **ApJ**, 737,23
- 60) Bu, D., **Yuan, F.** & Stone, J. *Magnetothermal and magnetorotational instabilities in hot accretion flows*, 2011, **MNRAS**, 413,2808
- 59) Zheng, S., **Yuan, F.**, Gu, W. & Lu, J.F. *Revisiting the Thermal Stability of Radiation-dominated Thin Disks*, 2011, **ApJ**, 732,52
- 58) Yu, Z., **Yuan, F.** & Ho, L. *On the origin of ultraviolet emission and the accretion model of low-luminosity AGNs*, 2011, **ApJ**, 726, 87
- 57) **Yuan, F.** & Bu, D.F. *On the convective instability of hot radiative accretion flows*, 2010, **MNRAS**, 408, 1051
- 56) Zhang, H., **Yuan, F.**, & Chaty, S. *Modeling the hard state of three black hole candidates*, 2010, **ApJ**, 717, 929
- 55) Wu, S., Chen, L. **Yuan, F.** *Reprocessed emission from warped accretion discs induced by Bardeen-Petterson effect*, 2010, **MNRAS**, 402, 537
- 54) Xie, F., Niedzwiecki, A., Zdziarski, A.A., & **Yuan, F.** *Global Compton Cooling in the Inner Regions of a Hot Accretion Flow: A Monte Carlo Simulation Approach*, 2010, **MNRAS**, 403,170
- 53) Ding, J., **Yuan, F.** & Liang, E. *Electron heating and acceleration by magnetic reconnection in hot accretion flows*, 2010, **ApJ**, 708, 1545
- 52) **Yuan, F.** *Some developments of hot accretion flow theory in the past ten years*, 2010, **Sci. China-Phys. Mech. Astron**, 53 (Suppl. 1), 24
- 51) Wu, M., **Yuan, F.** & Bu, D. *Numerical simulation of hot accretion flows with thermal conduction*, 2010, **Sci. China-Phys. Mech. Astron**, 53 (Suppl. 1), 168

- 50) Bu, D., **Yuan, F.** Wu, M. & Yang, X. On the effect of injection of gas in the numerical simulation of accretion flows, 2010, **Sci. China-Phys. Mech. Astron.**, 53 (Suppl. 1), 139
- 49) **Yuan, F.**, Yu, Z. & Ho, L. C. *Revisiting the "Fundamental Plane" of Black Hole Activity at Extremely Low Luminosities*, 2009, **ApJ**, 703, 1034-1043
- 48) Chen, L., Wu, S., & **Yuan, F.** *A Steady state solution for warped accretion discs*, 2009, **MNRAS**, 398, 1900
- 47) Zhang, H.; Wang, Y.; **Yuan, F.**; Ding, F.; Luo, X.; Peng, Q. H. *Is the energy generation rate of nuclear reactions in hot accretion flows important?* 2009, **A&A**, 502, 419
- 46) Dodds-Eden, K. **Yuan, F.**(排名第 23) *Evidence for X-Ray Synchrotron Emission from Simultaneous Mid-Infrared to X-Ray Observations of a Strong Sgr A* Flare*, 2009, **ApJ**, 698, 676
- 45) **Yuan, F.**, Lin, J., Wu, K., & Ho, L. *A Magnetohydrodynamical Model for the Formation of Episodic Jets*, 2009, **MNRAS**, 395, 2183-2188
- 44) **Yuan, F.** Xie, F.G. & Ostriker, J.P. *Global Compton heating and cooling in hot accretion flows*, 2009, **ApJ**, 691, 98
- 43) Bu, D.F., **Yuan, F.** & Xie, F.G. *Self-Similar Solution of Hot Accretion Flows with Ordered Magnetic Field and Outflow*, 2009, **MNRAS**, 392, 325
- 42) Pszota, G., Zhang, H., **Yuan, F.** & Cui, W. *Origin of X-ray Emission from Transient Black Hole Candidates in Quiescence*, 2008, **MNRAS**, 389, 423
- 41) Xie, F. G. & **Yuan, F.** *The influence of outflow on the dynamics of inflow*, 2008, **ApJ**, 681, 499-505
- 40) **Yuan, F.**, Ma, R. Narayan, R. *A simplified global solution for an advection-dominated accretion flow*, 2008, **ApJ**, 679, 984
- 39) **Yuan, F.**, Zdziarski, Andrzej, A., Xue, Yongquan, Wu, Xue-Bing, *Modeling the hard states of XTE J1550--564 during its 2000 outburst*, 2007, **ApJ**, 659, 541-548

- 38) **Yuan, F.**, Taam, R. E., Misra, R., Wu, X.-B., Xue Y., *Accretion Disk Spectra of the Brightest Ultra-luminous X-ray Source in M82*, 2007, ApJ, 658, 282-287
- 37) Ma, R., **Yuan, F.**, Wang, D. *Influence of the Magnetic Coupling Process on the Advection Dominated Accretion Flows around Black Holes*, 2007, ApJ, 671, 1981-1989
- 36) Huang, L., Cai, M., Shen, Z.Q., **Yuan, F.** *Black Hole Shadow Image And Visibility Analysis of Sgr A**, 2007, MNRAS, 379, 833-840
- 35) Wu, Q., **Yuan, F.**; Cao, X., *On the Origin of X-Ray Emission in Some FR I Galaxies: ADAF or Jet?* 2007, ApJ, 669, 96-105
- 34) **袁峰**, *黑洞吸积理论及其天体物理学应用的近期发展 (I)*, 2007, 《天文学进展》, 25, 1-14
- 33) **袁峰**, *黑洞吸积理论及其天体物理学应用的近期发展 (II)*, 2007, 《天文学进展》, 25, 285-295
- 32) **Yuan, F.**, Shen, Zhi-Qiang, Huang, L., *Testing the Radiatively Inefficient Accretion Flow Model for Sagittarius A* Using the Size Measurements*, 2006, ApJ, 642, L45-L48
- 31) Nemmen, R. S., Storchi-Bergmann, T., **Yuan, F.**, Eracleous, M., Terashima, Y., Wilson, A. S. *Radiatively Inefficient Accretion Flow in the Nucleus of NGC 1097*, 2006, ApJ, 643, 652-659
- 30) Xue, Yongquan, **Yuan, F.**, Cui, Wei, *X-Ray Spectral Variability of TeV Blazars during Rapid Flares*, 2006, ApJ, 647, 194-200
- 29) Xu, Ya-Di, Narayan, R., Quataert, E., **Yuan, F.**, Baganoff, F. K. *Thermal X-Ray Iron Line Emission from the Galactic Center Black Hole Sagittarius A**, 2006, ApJ, 640, 319-326
- 28) **Yuan, F.**, Taam, R. E., Xue, Yongquan, Cui, Wei, *Hot One-Temperature Accretion Flows Revisited*, 2006, ApJ, 636, 46-55
- 27) **Yuan, F.**, Cui, W. *The radio---X-ray correlation and quiescent state of black hole*

sources, 2005, ApJ, 629, 408-413

- 26) **Yuan, F.**, Cui, W., Narayan, R. *An Accretion-Jet Model for Black Hole Binaries: Interpreting the Spectral and Timing Features of XTE J1118+480*, 2005, ApJ, 620, 905-914
- 25) Garcia, M.R., Williams, B.F., **Yuan, F.**, Kong, A.K.H., Primini, F.A., Barmby, P., Kaaret, P., Murray, S.S., *A Possible Detection of M31* with Chandra* 2005, ApJ, 632, 1042-1047
- 24) **Yuan, F.**, Narayan, R. *On the nature of X-ray bright optically-normal galaxies*, 2004, ApJ, 612, 724-728
- 23) **Yuan, F.**, Zdziarski, A. A. *Luminous hot accretion flows: the origin of X-ray emission of Seyfert galaxies and black hole binaries*, 2004, MNRAS, 354, 953-960
- 22) **Yuan, F.**, Quataert, E., Narayan, R. *On the Nature of the Variable Infrared Emission from Sagittarius A**, 2004, ApJ, 606, 894-899
- 21) Filho, M. E.; Fraternali, F.; Markoff, S.; Nagar, N. M.; Barthel, P. D.; Ho, L. C.; **Yuan, F.** *Further clues to the nature of composite LINER/H II galaxies*, 2004, A&A, 418, 429-443
- 20) Kong, A.K.H., Di Stefano, R., & **Yuan, F.** *Evidence for an intermediate-mass black hole: Chandra and XMM-Newton observations of the ultra-luminous supersoft X-ray source in M101 during the 2004 outburst*, 2004, ApJ, 617, L49-L52
- 19) **Yuan, F.**, Quataert, E., & Narayan, R. *Nonthermal Electrons in Radiatively Inefficient Accretion Flow Models of Sagittarius A**, 2003, ApJ, 598, 301-312
- 18) **Yuan, F.** *Luminous hot accretion flows: thermal equilibrium curve and thermal stability*, 2003, ApJ, 594, L99-L102
- 17) **Yuan, F.**, Markoff, S., Falcke, H., *A jet-ADAF model for Sgr A**, 2002, A&A, 383, 854-863
- 16) **Yuan, F.**, Markoff, S., Falcke, H., Biermann, P.L. *NGC 4258: A jet-dominated*

low-luminosity AGN?, 2002, *A&A*, 391, 139-148

15) **Yuan, F.** *Luminous hot accretion disks*, 2001, *MNRAS*, 324, 119-127

14) Markoff, S., Falcke, H., **Yuan, F.**, Biermann, P.L., *The Nature of the 10 kilosecond X-ray flare in Sgr A**, 2001, *A&A*, 379, L13-L16

13) **Yuan, F.** *Possible Evidence for the disk origin for the powering of jets in Sgr A* and nearby elliptical galaxies*, 2000, *MNRAS*, 319, 1178-1184

12) **Yuan, F.**, Peng, Q.H., Lu, J.F., & Wang, J.M. *The role of the outer boundary condition in accretion disk models: theory and application*, 2000, *ApJ*, 537, 236-244

11) Lu, J.F., Gu, W.M., & **Yuan, F.**, *Global dynamics of advection-dominated accretion revisited*, 1999, *ApJ*, 523, 340-349

10) **Yuan, F.**, *Accretion flows: the role of the outer boundary condition*, 1999, *ApJ*, 521, L55-L58

9) **Yuan, F.**, Huang, K.L., *Locations of the sonic points in advection-dominated accretion flows around black holes*, 1999, *Chinese Physics Letters*, 14, 301

8) 袁峰, 吸积理论的近期进展 (II): 含激波的吸积理论, 1999, 《天文学进展》, Vol. 17, 228

7) 袁峰, 吸积理论的近期进展 (I): 径移主导吸积流, 1999, 《天文学进展》, Vol. 17, 148

6) **Yuan, F.** & Lu, J.F., *Dependence of the shock properties on the assumption to the flow motion and the shock condition*, 1998, *Communications in Theoretical Physics*, 30, 609

5) Lu, J.F. & **Yuan, F.**, *Global solutions of adiabatic accretion flows with isothermal shocks in Kerr black hole geometry*, 1998, *MNRAS*, 295, 66-72

4) Lu, J.F. & **Yuan, F.**, *Isothermal shocks in adiabatic black hole accretion flows*, 1997, *PASJ*, 49, 525-533

- 3) Lu, J.F., Yu, K.N., **Yuan, F.** & Young, E.C.M., *Standing Rankine-Hugoniot shocks in accretion and wind flows in Kerr geometry*, 1997, A&A, 321, 665-671
- 2) Lu, J.F., Yu, K.N., **Yuan, F.** & Young, E.C.M., *Multi-sonic points and possible shocks in relativistic adiabatic flows*, 1997, Astrophysical Letters & communications, 35, 389
- 1) **Yuan, F.**, Dong, S.F. & Lu, J.F., *Sonic Points and Shocks in Isothermal Accretion and Winds in Kerr Geometry*, 1996, Ap&SS, 246, 197-210