



[\(../index.htm\)](#)

[首页 \(../index.htm\)](#) > [人员 \(../ry/jsfc/gk.htm\)](#) > [教师 \(../ry/jsfc/gk.htm\)](#) > [按专业分类](#)

[\(../ry/jsfc/azyfl.htm\)](#)

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个人简历

教育： 美国哈佛大学(Harvard University) 物理系博士 （1987年）；

美国哈佛大学(Harvard University) 物理系硕士 （1983年）；

北方交通大学应用数学物理系物理师资班工学学士（1982年）。

工作经历：

清华大学物理系教授 （2002.5-）；

Visiting Scientist, Department of Astronomy and Astrophysics,

The University of Chicago (2002-);

Visiting Professor, National Astronomical Observatories,

Chinese Academy of Sciences (2001-);

Senior Research Associate,

Department of Astronomy and Astrophysics,

The University of Chicago (2001);

Visiting Professor, Institute of Astronomy and Astrophysics,

Academia Sinica (ASIAA), Taiwan (1999-2000);

Research Scientist, Department of Astronomy and Astrophysics,

The University of Chicago (1995-2001);

Visiting Scientist, International Space Science

Institute (ISSI), Bern, Switzerland (1998 summer);

Research Associate, Department of Astronomy and Astrophysics,

The University of Chicago (1991-1995);

Research Assistant Professor, Geophysical Institute,

University of Alaska Fairbanks (1989-1991);

Postdoctoral Fellow,

Advanced Study Program and High Altitude Observatory,

National Center for Atmospheric Research(1987-1989);

Visiting Scientist, Institut für Theoretische Astrophysik

der Universität Heidelberg (1986, 1988).

教学

清华大学基础科学班 “普通物理” (英语授课;2004春季学期,2003春季学期); 清华大学研究生课 “流体与磁流体天体物理” (2004春季学期,2003春季学期);

Lecturer, Beijing Summer School on Solar and

Space Physics, National Astronomical Observatories,

Chinese Academy of Sciences,

Beijing, China, May 17-May 21, 2004;

Graduate Lectures on Stellar Oscillations

at the National Central University (中央大学),Taiwan (2000);

Graduate Lectures on Fluid Mechanics

at the National Taiwan University (台湾大学),Taiwan (1999);

Lecturer,The European Summer School:

Dynamical Magnetohydrodynamic Phenomena in Solar and

Astrophysical Plasmas, Fodele, Crete,

Greece, June 22 - July 3, 1998;

Graduate Course on Classical Mechanics,

University of Alaska Fairbanks (1990);

Instructor of Physics, Physics Department,

Harvard University(1985-1986).

研究领域

流体和磁流体理论天体物理: Theoretical and computational investigations of solar,

space, magnetospheric, stellar, galactic, pulsar and

galaxy cluster astrophysical fluid dynamics and

relativistic magnetohydrodynamics.

奖励、荣誉和学术兼职

清华大学《百人计划》天体物理项目主持人；

清华大学物理系小林华阳奖(2004)；

中美前沿科学Beckman会议组委会成员(2002-2003)；

Member of the Review Panel in the Stellar Astronomy and

Astrophysics Program, US National Science Foundation.

Fellow of Advanced Study Program, US National Center

for Atmospheric Research (1987-1989)；

1981年第一届中美物理联合考试（CUSPEA）竞胜者。

主要论著

已在Nature, Science, The Astrophysical Journal (Letters), Monthly Notices of the Royal Astronomical Society (Letters), Journal of Geophysical Research, Geophysical Research Letter, Astronomy and Astrophysics, Astrophysics and Space Science等国际杂志上发表七十三篇文章；在国际会议上发表论文二十七篇；做邀请报告四十余次。在《自然》杂志上首次提出旋涡星系磁流体快、慢密度波理论。在《科学》杂志上首次提出星冕磁重力波理论。

中文译校

The Facts on File SPACE AND ASTRONOMY Handbook

by Joseph A. Angelo, Jr., 2004年6月，光明日报出版社。

Solar and Space Physics:

(1) "Standing Magnetohydrodynamic Wave Modes in

a Viscous, Gravitationally Stratified Cylindrical Plasma",

Lou, Y.Q., Geophysical and Astrophysical Fluid Dynamics,

42, 277-314, 1988.

(2) "The Onset of Magnetohydrodynamic Convective Instability. I. Ideal

Limit, Lou, Y.Q., The Astrophysical Journal, 347, 520-528, 1989.

(3) "Viscous Magnetohydrodynamic Modes and

p-Mode Absorption by Sunspots", Lou, Y.Q.,

The Astrophysical Journal, 350, 452-462, 1990.

(4) "Modeling Solar Force-Free Magnetic Fields", Low, B.C.,

and Lou, Y.Q., The Astrophysical Journal, 352, 343-352, 1990.

(5) "On the Process of Resistive Heating Instability and

the Formation of Coronal Loop Structures", Lou, Y.Q.,

The Astrophysical Journal, 395, 682-696, 1992.

(6) "Density Structure in a Multi-Component Coronal Loop", Lenz D.D.,

Lou Y.Q., and Rosner R., The Astrophysical Journal, 504, 1020-1028, 1998.

Physics of Solar Wind and Heliosphere:

(1) "Three-Dimensional Magnetic Field Configurations in the Heliosphere",

Lou, Y.Q. Journal of Geophysical Research, 97, 17,183-17,186, 1992.

(2) "Propagation of Three-Dimensional Alfvén Waves and its Nonlinear

Effects in the Solar Wind", Lou, Y.Q. Journal of Geophysical Research,

98, 3563-3584, 1993.

(3) "Three-Dimensional Steady Compressible Perturbations

in the Magnetohydrodynamic Solar Wind", Lou, Y.Q.

Journal of Geophysical Research, 98, 11501-11512, 1993.

(4) "Three-Dimensional Nonsteady Compressible

Magnetohydrodynamic Fluctuations in the Solar Wind", Lou, Y.Q.

Journal of Geophysical Research, 98, 11,483-11,500, 1993.

(5) "Compressible Fluctuations in the Equatorial

Solar Wind with a Spiral Magnetic Field", Lou, Y.Q.

Journal of Geophysical Research, 99, 8491-8504, 1994.

(6) "Alfvénic Disturbances in the Equatorial Solar Wind with

a Spiral Magnetic Field", Lou, Y.Q. Journal of Geophysical

Research, 99, 14,747-14,760, 1994.

(7) "Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal

Winds from the Rotating Sun", Lou Y.Q., The Astrophysical

Journal Letters, 571, L187-L190, 2002.

(8) "Corotating Shock Accelerated Particles Guided by

Wavy Spiral Magnetic Fields in the Solar Wind at

High Heliospheric Latitudes", Lou, Y.Q.,

Geophysical Research Letters, 23, 609-612, 1996.

Relativistic Magnetohydrodynamic Pulsar Wind:

(1) "Three-Dimensional Magnetic Field Configurations in Relativistic

Magnetohydrodynamic Outflows", Lou, Y.Q. The Astrophysical Journal

Letters, 397, L67-L70, 1992.

(2) "Alfvénic Fluctuations in Relativistic Wind with a Spiral Magnetic

Field and Random Magnetic Field Structures in the Crab Nebula",

Lou, Y.Q. The Astrophysical Journal, 414, 656-663, 1993.

(3) "Three-Dimensional Propagation of Transverse Magnetohydrodynamic

Perturbations in Relativistic Winds", Lou, Y.Q. The Astrophysical Journal, 418, 709-729, 1993.

(4) "Wisps and Knots in the Inner Crab Nebula", Lou, Y.Q., Monthly Notices of the Royal Astronomical Society, 294, 443-447, 1998.

Solar and Stellar Oscillations:

(1) "Discrete High-Frequency P-Modes as Probes of Structures in the Chromosphere, Transition Region, and Lower Corona of the Sun", Lou, Y.Q. The Astrophysical Journal Letters, 414, L141-L144, 1993.

(2) "Reflection of Alfvén Waves in Stellar Atmospheres: The Case of Open Magnetic Fields", Lou, Y.Q. and Rosner, R. The Astrophysical Journal, 424, 429-435, 1994.

(3) "Gravity Waves in the Lower Solar Corona", Lou, Y.Q., The Astrophysical Journal, 442, 401-404, 1995.

(4) "Long-Period Network Oscillations in the Solar Chromosphere", Lou, Y.Q. Letter in Monthly Notices of the Royal Astronomical Society, 274, L1-L4, 1995.

(5) "Possible Oscillation Modes of Magnetic White Dwarfs", Lou, Y.Q., Letter in Monthly Notices of the Royal Astronomical Society, 275, L11-L15, 1995.

(6) "Gravito-Acoustic Wave Transformation in Stellar Atmospheres", Lou, Y.Q., Monthly Notices of the Royal Astronomical Society, 276, 769-784, 1995.

(7) "Compressible Magnetohydrodynamic Waves in Stellar Atmospheres with Radial Magnetic Fields -- I. Analytic Analysis", Lou, Y.Q., Monthly Notices of the Royal Astronomical Society, 281, 750-760, 1996.

(8) "Compressible Magnetohydrodynamic Waves in Stellar Atmospheres with Radial Magnetic Fields -- II. Numerical Solutions and Applications", Lou, Y.Q., Monthly Notices of the Royal Astronomical Society, 281, 761-780, 1996.

(9) "Trapped Coronal Magneto-Gravity Modes", Lou, Y.Q., Science, 272, 521-523, 1996.

(10) "Solar p-Modes Modulated by Interior g-Modes", Lou Y.Q., The Astrophysical Journal Letters, 556, L121-L125, 2001.

Galactic Magnetohydrodynamic Density Waves:

(1) "Origin of the Magnetic Spiral Arms in the Galaxy NGC6946",

Fan Z.H. and Lou Y.Q., Nature, 383, 800-802, 1996

(2) "Swing Amplification of Magnetohydrodynamic Density

Waves in Thin Gaseous Disks", Fan Z.H. and Lou Y.Q., Monthly

Notices of the Royal Astronomical Society, 291, 91-109, 1997.

(3) "Fast and Slow Density Waves in Magnetized Spiral Galaxies",

Lou Y.Q. and Fan Z.H., The Astrophysical Journal, 493, 102-120, 1998.

(4) "Coupled Galactic Spiral Density Wave Modes in a Composite

System of Stellar and Gaseous Disks", Lou Y.Q. and Fan Z.H., Monthly

Notices of the Royal Astronomical Society, 297, 84-100, 1998.

(5) "Energy, Angular Momentum and Wave Action of Associated

with Density Waves in a Rotating Magnetized Gas Disc", Fan Z.H.

and Lou Y. Q., Monthly Notices of the Royal Astronomical Society,

307, 645-658, 1999.

(6) "Fast Magnetohydrodynamic Density Waves in Spiral Galaxies",

Lou Y.Q., Han J.L. and Fan Z.H., Letters in Monthly Notices of the

Royal Astronomical Society, 308, L1-L5, 1999.

Magnetohydrodynamic Tidal Waves:

(1) "Nonlinear Magnetohydrodynamic Waves in

a Steady Zonal Circulation for a Shallow Fluid Shell on

the Surface of a Rotating Sphere", Lou, Y.Q.,

The Astrophysical Journal, 322, 862-869, 1987.

(2) "Rossby-Type Wave Induced Periodicities in Flare

Activities and Sunspot Areas or Groups during Solar Maxima",

Lou Y.Q., The Astrophysical Journal, 540, 1102-1108, 2000.

(3) "MHD Tidal Waves on a Spinning Magnetic Compact Star",

Lou Y.Q., The Astrophysical Journal Letters, 563, L147-L150, 2001.

Magnetospheric Physics:

(1) "Magneto-Inertial Oscillations of Jupiter's Inner Radiation Belt",

Lou Y.Q., The Astrophysical Journal, 548, 460-465, 2001.

(2) "Radio Pulses Through a Magnetized Relativistic Pair Plasma Flow",

Lou Y.Q., The Astrophysical Journal Letters, 572, L91-L94, 2002.

(3) "On the Importance of Searching for Oscillations of the Jovian Inner

Radiation Belt with a Quasi-Period of 40 Minutes", Lou Y. Q. and Zheng C.,

Letters in Monthly Notices of the Royal Astronomical Society, 344, L1-L5, 2003.

(4) "Electromagnetic Radiation Outbursts from the Collision of

P/Shoemaker-Levy 9 Comet with Jupiter", Lou, Y.Q.,

Astrophysics and Space Science, 222, 231-234, 1994.

Astrophysical Collapses and Outflows:

(1) "Gravitational Collapse in the Presence of a Finite-Amplitude Circularly

Polarized Alfvén Wave", Lou, Y.Q., Letter in Monthly Notices of the

Royal Astronomical Society, 279, L67-L71, 1996.

(2) "Envelope Expansion with Core Collapse.I. Spherical Isothermal

Similarity Solutions", Lou Y.Q. and Shen Y., Monthly Notices of the

Royal Astronomical Society, 348, 717-734, 2004.

Physics of Galaxy Clusters:

(1) "Magnetic Sunyaev-Zel'dovich Effect in Galaxy Clusters", Hu J.

and Lou Y.Q., The Astrophysical Journal Letters, 606, L1-L4, 2004.

(2) "X-Ray Triple Rings around the M87 Jets in the Central

Virgo Cluster", Feng H., Zhang S.N., Lou Y.-Q. and Li T.P.,

The Astrophysical Journal Letters, 2004, 607, L95-L98.

Physics of Astrophysical Discs:

(1) "Perturbation Configurations in a Two-Fluid System of Singular

Isothermal Disks", Lou Y.Q. and Shen Y., Monthly Notices of the

Royal Astronomical Society, 343, 750-770, 2003.

(2) "Gravitationally Coupled Scale-Free Discs", Shen Y. and Lou Y.Q.,

Monthly Notices of the Royal Astronomical Society, 2004, in press.

(3) "Stationary perturbation configurations in a composite system of

stellar and coplanarly magnetized gaseous singular isothermal discs",

Lou Y.Q. and Zou Y.,

Monthly Notices of the Royal Astronomical Society, 350, 1220-1252, 2004.

(4) "Axisymmetric stability criterion for two gravitationally coupled

singular isothermal discs", Shen Y. and Lou Y.Q., Monthly Notices of

the Royal Astronomical Society, 345, 1340-1350, 2003.

(5) "Stationary Non-axisymmetric Configurations of Magnetized Singular

Isothermal Discs", Lou Y.Q., Monthly Notices of the Royal Astronomical

Society, 337, 225-241, 2002.

