

# Jia-Cheng LIU

---

## Personal information

Gender: Male

Married: one child

Date of birth: 31 Oct, 1984

Citizenship: P.R. China

School of Astronomy and Space Science  
Nanjing University  
163 XianLin Avenue  
210023 Nanjing, P.R. China

Tel: +86-25-8968-1233  
Mobile: +86-13770-533855  
E-mail: [jcliu@nju.edu.cn](mailto:jcliu@nju.edu.cn)

## Education

- SYRTE, l'Observatoire de Paris, Ph.D., Astrometry and Celestial Mechanics, Sep 2011 – Sep 2012  
– Supervisor: Prof. Nicole Capitaine
- Nanjing University, P.R. China, Ph.D., Astrometry and Celestial Mechanics, Sep 2009 – Sep 2012  
– Supervisor: Prof. Zi Zhu
- Nanjing University, P.R. China, Master, Astrometry and Celestial Mechanics, Sep 2007 – Jul 2009  
– Supervisor: Prof. Zi Zhu
- Nanjing University, P.R. China, B.Sc., Astronomy, Sep 2003 – Jul 2007

## Working Experience

- Assistant Research Fellow, Nanjing University, Oct 2012 – Sep 2015
- Associate Research Fellow, Nanjing University, Sep 2015 – present
- Teaching course: Analytical Mechanics (undergraduate students of 2nd year)

## Honors & Awards

- Excellent PhD Thesis of Nanjing University (2012): *The establishment, realization, and transformation of new astronomical reference systems*

## Research Interests Related to Gaia

- Theories in celestial reference systems and frames: Linking the VLBI and Gaia reference frames
- Precession-nutation of the Earth's: Study Earth's rotation in the Gaia reference frame
- Astrometry: kinematics of the solar neighborhood and the Milky Way: Exploit Gaia data for better understanding of the kinematics of our Galaxy

## Research Skills

- Catalogue data reduction and analysis
- VLBI data reduction with Calc/Solve
- Spherical and vectorial astromony
- Programming languages: C, FORTRAN, Mathematica
- Astronomical softwares: Origin, Topcat, etc.
- Language ability: English, Chinese

## Publications

1. **Liu J.-C.** & Zhu Z., 2010, *Rotation curve of the Galactic outer disk derived from radial velocities and UCAC3 proper motions of carbon stars*, **RAA**, 10, 541-552
  2. **Liu J.-C.**, Zhu Z. & Zhang H., 2010, *Reconsidering the Galactic coordinate system*, **A&A**, 526, A16
  3. Huang T.-Y. & **Liu J.-C.**, 2011, Translation of IAU 2006 “*Nomenclature for Fundamental Astronomy*” Glossary, (in Chinese)
  4. **Liu J.-C.** Zhu Z. & Hu B., 2011, *Position and proper-motion systematic difference between the PPMX and UCAC3 catalogs*, **RAA**, 11, 1074
  5. **Liu J.-C.** Zhu Z. & Hu B., 2011, *Constructing a Galactic coordinate system based on near-infrared and radio catalogs*, **A&A**, 536, A102
  6. **Liu J.-C.** Capitaine N., Lambert S. B., Malkin Z. & Zhu Z., 2012 *Systematic effect of the Galactic aberration on the ICRS realization and the Earth orientation parameters*, **A&A**, 548, A50
  7. **Liu J.-C.** & Zhu Z., 2012, *Explanation and Implementation of IAU 2000/2006 Resolutions on Fundamental Astronomy*, **Progress in Astronomy**, 30, 411 (Review paper in Chinese)
  8. **Liu J.-C.**, Xie Y. & Zhu Z., 2013, *Aberration in proper motions for stars in our Galaxy*, **MNRAS**, 433, 3597
  9. Capitaine N. & **Liu J.-C.**, 2014, *The Evaluation of the Earth’s Dynamical Flattening Based on the IAU Precession-nutation and VLBI Observations*, **Proceedings of the IVS 2014 General Meeting**, 373–375
  10. Huyan Z.-B., Zhu Z. & **Liu J.-C.**, 2015, *Kinematics of solar neighborhood stars and dependence on age and metallicity*, **RAA**, 15, 393
- submitted papers
11. **Liu J.-C.** & Capitaine N., 2016, *Evaluation of a possible upgrade of the IAU 2006 precession*, **A&A**, accepted
  12. Liu N., **Liu J.-C.** & Zhu Z., 2016, *Test of source selection for constructing a more stable and uniform celestial reference frame*, **MNRAS**, accepted
  13. **Liu J.-C.**, Wan X.-S., Liu N. & Zhu Z., 2016, *Characterization of the uniformity of the source distribution in celestial reference frame*, **A&A**, submitted
  14. Ding P.-J., Zhu Z. & **Liu J.-C.**, 2016, *Galactic kinematics based on high-mass star-forming regions*, **AJ**, submitted
  15. Ding P.-J., Zhu Z. & **Liu J.-C.**, 2016, *Galactic kinematics based on Gaia DR1 TGAS catalogue – The local velocity ellipsoid*, **A&A**, submitted

## Oral presentations in International Meetings:

1. IAU Symposium 261, 27 Apr - 1 May, 2009, Virginia Beach, VA, USA
2. Journées 2013 “Système de Référence spatio-temporels” 16-18 Sep, 2013, Observatoire de Paris, France
3. Journées 2014 “Système de Référence spatio-temporels” 22-24 Sep, 2014, Pulkovo observatory, Russia
4. IVS 2014 General Meeting Proceedings “VGOS: The New VLBI Network”, 2-7 March 2014, Shanghai, China
5. XXVIIIth IAU General Assembly, 20-30 Aug, 2012, Beijing, China
6. XXIXth IAU General Assembly, 3-14 Aug, 2015, Honolulu, Hawaii, USA