Siyi Feng

East Asian Core Observatories Association
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EDUCATION

Doctor of Natural Sciences *Sep. 2011-Feb. 2015*
Universiät Heidelberg & Max-Planck-Institut für Astronomie, Heidelberg, Germany
•Major: Physics & Astronomy
Thesis for degree: Chemical and dynamic sub-structures of the high-mass star-forming regions (HMSFRs)

Master of Science in Astrophysics *Sep. 2008-Jun. 2011*
Nanjing University, Jiangsu, China
•Major: Astrophysics
Thesis for degree: Study on the Gamma-Ray Burst (GRB) in Fermi Era

Bachelor of Science in Astronomy *Sep. 2004-Jun. 2008*
Nanjing University, Jiangsu, China
•Major: Astrophysics
Thesis for degree: Late Internal Shock Model for the X-ray Flares of the GRB Afterglow

RESEARCH INTEREST

• High-mass and low-mass star formation • Protoplanetary disk • Astrochemistry

APPOINTMENTS

East Asian Core Observatories Association *Dec. 2017-present*
-East Asian Core Observatories Association (EACOA) postdoc fellow @NAOJ, NAOC, ASIAA
• Lead the high-spatial-resolution line-imaging survey towards a sample of 25 high-mass star forming regions. Each region contains a pair of neighbouring 70 μm dark/bright clumps, serving as space laboratory for comparative chemical and kinematic study. In particularly, the 70 μm dark clump has L/M $< 1\,L_\odot/M_\odot$. Using JVLA-GBT, IRAM-30 m (120 h, completed, *Feng et al. 2019a*, *Feng et al. sub1.*), ALMA (90 h, 70% completed), this survey was carried out at 1.3 cm, 3 mm and 1 mm wavelengths, allowing us to characterise the physio-chemical properties of the initial conditions of low-mass and high-mass star formation.
• Lead the multi-scale (1 pc down to 1000 AU) kinematic and chemical study (1 mm/3 mm, NOEMA-IRAM 30 m, SMA-30 m) of the high-mass disk candidates NGC 7538 IRS9 (*two 1st-author paper, in prep.*);
• Lead the line-imaging survey (1mm/3mm, Nobeyama-45 m, IRAM-30 m, Effelsberg-100 m, ALMA) towards the infrared bright rim bubble N2, in understanding the effect of the expanding HII in star formation (*one 1st-author paper, in prep.*);
• Sub-group leader of ALMA large project "Fifty AU STudy of the chemistry in the disk/envelope system of Solar-like protostars" (FAUST) on the chemistry of low-mass disk candidate GSS30 (*one 1st-author paper, in prep.*);
-Hosts: Dr. K. Tatematsu (2018 in NAOJ); Dr. D. Li (2019 in NAOC); Dr. S. Liu (2020 in ASIAA)

Max-Planck-Institut for Extraterrestrial Physics (DE) *Mar. 2015-Nov.2017*
-European Research Council (ERC) postdoc fellow @The Center for Astrochemical Studies
• Lead the high spatial resolution line-imaging survey (1mm/2mm/3mm/1.3 cm, NOEMA, SMA, IRAM-30 m, VLA) of sulfur (S-)bearing species and carbon-chains towards the low-mass shocked region L1157-B1 (*Feng et al. sub2, and two 1st-author paper, in prep.*);
-Director: Prof. Dr. Paola Caselli

Harvard-Smithsonian Center for Astrophysics (US) *Dec. 2013-Feb. 2014*
-Visiting Scholar
• Lead the high spatial resolution line-imaging survey (1mm/3mm, IRAM-30 m-SMA) towards four IRDCs, conclude that the initial fragmentation is an non-thermal, non-quiescent process (*Feng et al. 2016c*);
• Detect two bipolar, high-velocity (up to 40 $\mathrm{km\,s^{-1}}$) outflows (NOEMA) towards a "classic high-mass starless core", conclude that star formation has already begun in this $> 40M_\odot$, $< 10L_\odot$ region (*Feng et al. 2016b*).
-Host and collaborator: Dr. Qizhou Zhang

Max Planck Institute for Astronomy (DE) *Sep. 2011-Feb. 2015*
-Marie Curie Early Stage Researcher (ESR/PhD) @Planet and Star Formation Group
• Study the chemical structure of the high-mass star-forming regions NGC 7538 S and IRS1 by comparing observations (NOEMA) with gas-grain model fittings, conclude that the fragmentation is hierarchic and that chemical history of the cores collapsed from the same natal cloud is asynchronized (*Feng et al. 2016a*);
• Study the chemical substructure of the nearest high-mass star-forming region Orion-KL (SMA-IRAM-30 m), conclude that the different spatial distributions of the complex organics indicate their different gas-grain forming paths (*Feng et al. 2015*).
-Advisor: Prof. Dr. Henrik Beuther

Nanjing University (CN) *Sep. 2008-Jun. 2011*
-Graduated Research Assistant @High Energy Group
• Construct a model of "structured ejecta sweeping up the density-jump medium" to the Gamma-Ray Burst (GRB), which well explains both the flares / bumps on the late afterglows at lower-energy band and the early steep-rising of GeV lightcurve observed by Fermi/ LAT, suggesting the external origin of the GeV photons (*Feng et al. 2011*);
• Simulate the polarization evolution in a relativistic wind bubble, which fits the observed GRB data.
-Advisor: Prof. Zigao Dai

University of Sheffield (UK) *Jul.-Aug. 2007*
-Summer Student Researcher @Department of Applied Mathematics
• Revise the models for solar internal f/p/g-modes, including the combined effects from the changes of atmospheric magnetic field, temperature and steady state during a solar cycle (*the Best Oral Presentation*);
-Advisor: Prof. Róbert von Fáy-Siebenbürgen

Nanjing University (CN) *Sep. 2007-Sep. 2008*
-Undergraduate Advanced Project Student Researcher @Department of Astronomy
• Built numerical codes for the dynamic and radiation processes of the "late internal shock" phenomenon towards to GRB, which fits well with the observation of X-ray flares (*Excellent Thesis for the Bachelor Degree*).
-Advisor: Prof. Zigao Dai

SELECTED OBSERVING PROPOSALS

Accepted proposals

• **PI, 9.0 h (12 m)+47.0 h (ACA), ALMA** *#2019.1.00733.S*:
The initial gas flow towards extremely young high-mass clumps
• **PI, 3.5 h (12 m)+18.1 h (ACA), ALMA** *#2019.1.00408.S*:
The sequential star formation towards the IR bright rim of an HII bubble
• **PI, 11.4 h (12 m)+90.4 h (ACA), ALMA** *#2018.1.00101.S*:
The initial gas flow towards extremely young high-mass clumps
• **PI, 4.4 h (12 m)+20.6 h (ACA), ALMA** *#2018.1.00215.S*:
The sequential star formation towards the IR bright rim of an HII bubble
• **PI, 5.8 h (12 m)+5.6 h (ACA), ALMA** *#2018.1.00375.S*:
Sulfur chemistry in the transition zone of low-mass protoplanetary systems
• **PI, 30 h, JVLA** *#17A-067*:
Temperature and density structure of high mass, low luminosity/mass ratio clumps
• **PI, 18 h, JVLA** *#17A-068*:
Detailed physical structure of the protostellar shock region L1157-B1
• **PI, 83 h, IRAM-30 m** *#115-17*:
Initial star-forming activities towards the high-mass, low luminosity-to-mass ratio clumps
• **PI, 40 h, Nobeyama-45 m** *#CG171006*:
Initial star-forming activities towards the high-mass, low luminosity/mass ratio clumps
• **PI, 27 h, IRAM-30 m** *#009-17*:
Sequential physical and chemical properties of the molecular clumps along the rim of an IR bubble
• **PI, 37 h, IRAM-30 m** *#017-17*:
Deuterated organics in the earliest phase of high-mass star formation
• **PI, 44 h, IRAM-30 m** *#024-17*:
Sulfur chemistry in the shocked region L1157-B1 & B2
• **PI, 9 h, APEX** *#M9505b-99*:
Deuterated organics in the earliest phase of high-mass star formation
• **PI, 20 h, Effelsberg-100 m** *#105-16*:
Temperature profile of the star-forming clumps on the rim of the infrared (IR) bubble N2
• **PI, 28 h, SMA** *#2016B-S029*:
Sulfur and organic chemistry in the shocked region L1157-B1 and B2
• **PI, 17 h, IRAM-NOEMA-30 m** *#W16AF &204-16*:
The main reservoir of sulfur on dust grains in the shocked region L1157-B1
• **PI,16 h, IRAM-30 m** *#036-16*:

Deuteration in the earliest phase of high-mass star formation
• **PI, 32 h, IRAM-NOEMA** *#W14AB*:
Dynamics and chemistry in the earliest phase of high-mass star formation
• **PI, 13 h, IRAM-30 m** *#036-14*:
Fragmentations and chemistry in the earliest phase of high-mass star formation
• **PI, 20 h, SMA** *#2013A-S011*:
Fragmentation and dynamical collapse of high-mass starless gas clumps
• **PI, 2 h, IRAM-30 m** *#033-12*:
The chemical substructure of Orion-KL: SMA & 30 m in concert

• **Co-I, 19.8 h, ALMA** *#2019.1.01463*:
Gas accretion in the last thousand AU around high-mass protostars: filamentary streamers or disks? (PI: C. Yu)
• **Co-I, 16.3 h, ALMA** *#2019.1.00280*:
First detection of magnetic fields in the very central regions of starless dense cores (PI: T. Liu, KASI)
• **Co-I (the 3rd), 15 h, NOEMA+30 m** *#S19-AL*:
Kinematic and chemical signatures during high-mass cloud and star formation (PI: H. Beuther, MPIA)
• **Co-I, 106.2 h, ALMA** *#2018.1.01205.L*:
Fifty AU STudy of the chemistry in the disk/envelope system of Solar-like protostars (PI: S. Yamamoto, UT)
• **Co-I, 15.7 h, ALMA** *#2018.1.01449.S*:
Magnetic fields from infrared dark clouds to hot molecular cores (PI: H. Beuther, MPIA)
• **Co-I (the 1st), 8 h, NOEMA+30 m** *#S18-AN*:
Linking large and small scales for two high-mass protostars in NGC7538 (PI: J. Mottran, MPIA)
• **Co-I (the 1st), 24 h, NOEMA+30 m** *#S18-AO, W18-AX*:
Chemical layers of the high-mass disk candidate NGC7538 IRS9 (PI: Y. Wang, MPIA)
• **Co-I, 48 h, SMA** *#2018B-A004*:
Internal structures of high-mass starless clumps in different environments (PI: J. Yuang, NAOC)
• **Co-I, 21 h, JVLA** *#18A-422*:
Outflow feedback in early stages of clustered star formation (PI: K. Wang, ESO)
• **Co-I, 8.5 h, ALMA** *#2017.1.00526.S*:
Where and when do low-mass stars form in high-mass protoclusters? (PI: X. Lu, NAOJ)
• **Co-I, 9 h, ALMA** *#2017.1.00687.S*:
From filaments to cores: Dynamics in infrared dark clouds (PI: A. Barnes, MPE)
• **Co-I (the 1st), 24 h, Nobeyama-45 m** *#CG161011*:
Star formation on the rim of the infrared (IR) bubble N2 (PI: Y. Ao, NAOJ)
• **Co-I, 25 h, VLA** *#16B-259*:
Grain growth in the star-forming cluster rho Oph A (PI: A. Coutens, UCL)
• **Co-I, 41 h, IRAM-30 m** *#012-16*:
Measuring isotopic ratios in Galactic massive star forming regions with HC3N lines (PI: J. Wang, NAOC)
• **Co-I, 10 h, ALMA** *#2015.1.00492.S*:
Magnetic field structure at the onset of high-mass star (PI: H. Beuther, MPIA)
• **Co-I, 618 h, ESO public survey**:
Probing the Early Stages of Star Formation: Unravelling the Structure of Planck Cold Clumps Distributed Throughout the Sky (PI: K. Wang, ESO)
• **Co-I, 4 h, VLA** *#15A-115*:
Disk and jet formation around the 30Msun protostar NGC7538IRS1 (PI: H. Beuther, MPIA)
• **Co-I, 308 h, IRAM-NOEMA large programe** *#L14AB & 247-13*:
Fragmentation and disk formation during high-mass star formation (PI: H. Beuther, MPIA)
• **Co-I (the 1st), 19 h, IRAM-NOEMA-30 m** *#W06E & 230-12*:
Small-scale fragmentation of genuine high-mass starless cores (HMSCs) (PI: H. Beuther, MPIA)

ACADEMIC PUBLICATIONS

CONFERENCE CONTRIBUTIONS

• **What can chemistry tell us about the initial conditions and feedbacks of star-formation**
-**Talk** on PSF coffee, Heidelberg, Germany *(Oct., 2019)*
-**Talk** on Nanjing University Seminar, Nanjing, China *(Sep., 2019)*
-**Talk** for ISM workshop, Xinjiang, China *(Jul., 2019)*
-**Talk** for NAOJ seminar, Mitaka, Japan *(Jun., 2019)*

• **Astrochemistry tool: from the star formation to the cradle of life**
-**Talk** for UCL seminar, London, UK *(Jul., 2018)*
-**Talk** for EAO seminar, Hilo, USA *(May., 2018)*
-**Talk** during visit ASIAA, Taipei *(Mar., 2017)*

• **Star-forming activities towards extremely cold, young, high-mass star-forming regions**
-**Talk** on the “Tracing the flow", Windermere, UK *(Jul., 2018)*

• **Sequential physical and chemical properties of the molecular clumps along the rim of an infrared bubble**
-**Poster** on the “ALMA/Nobeyama/ASTE workshop", Mitaka *(Dec., 2017)*

• **Deuteration in the earliest phase of high-mass star formation**

-**Talk** on the “Workshop on interstellar matter 2018", Sapporo *(Nov., 2018)*
-**Talk** on the “MPIA star formation coffee", Heidelberg *(Jul., 2017)*

• **G28.34S, a prestellar or protostellar object?**
-**Talk** on the “EA-ALMA 2017 meeting", Taipei *(Mar., 2017)*

• **Outflow detection in a 70 micron dark high-mass core**
-**Talk** on the “European Week of Astronomy and Space Science 2016", Athens *(Jul., 2016)*

• **Chemistry and kinematics in high-mass star-forming regions**
-**Invited Talk** during visit NJU, NAOC, KIAA, SAO, China *(Jan, 2016)*

• **Are the Infrared Dark Clouds Really Quiescent?**
-**Poster** on the “From clouds to protoplanetary disks: the astrochemical link", Berlin *(Oct., 2015)*
-**Poster** on the “Soul of High-Mass Star Formation", Puerto Varas, Chile *(Mar., 2015)*

• **Complex Organic Molecules in Hot Molecule Cores**
-**Talk** on the “Complex Organic Molecules in Space", Pisa *(Mar., 2016)*
-**Invited Talk** on the “Chemical diagnostics of star and planet formation with Cycle 3 ALMA", MPE *(Jan., 2015)*

• **Chemical Substructure in High-mass Star-forming Regions**
-**Talk** on the “Soul of High-Mass Star Formation", Puerto Varas, Chile *(Mar., 2015)*
-Joint colloquium of MPIA and LSW **Talk**, MPIA *(Dec., 2014)*
-Radio and Geoastronomy Lunch **Talk**, Harvard-Smithsonian Center for Astrophysics *(Feb., 2014)*
-**Talk** on the “Plane & Star Formation Seminar", MPIA *(Dec., 2013)*

• **Inferring the Evolutionary Stages of NGC 7538S and NGC 7538 IRS1 from Chemistry**
-**Talk** on “Chemical Diagnostics in the ALMA/NOEMA Era", Heidelberg *(Jul., 2014)*
-**Talk** on “The Star Formation: Data, Models and Visualization–Harvard-Heidelberg Workshop" *(Jun., 2014)*
-**Poster** on “The Early Phase of Star Formation", Ringberg Castle, Germany *(Jun., 2014)*
-**Talk** on the 223rd American Astronomical Society Meeting, Washington DC, USA *(Jan., 2014)*
-**Talk** on the 17th Annual German Conference of Women in Physics *(Nov., 2013)*
-**Talk** on Conference of "Astrochemistry in the ALMA era", Copenhagen *(Jan., 2013)*
-**Poster** on "High-Mass Star Formation, From Large to Small Scales in the Era of Herschel & ALMA", Lorentz Center, Leiden *(Jan., 2013)*

• **Resolving the Chemical Substructure of Orion-KL**
-**Poster** on "Protostar & Planet VI", Heidelberg *(Jul., 2013)*
-**Poster** on Conference of "Astrochemistry in the ALMA era", Copenhagen *(Jan., 2013)*
-**Talk** on "2012 MPIA Students Workshop", Bar-sur-Seine *(Mar., 2012)*

• **Statistical Characteristics of Interstellar Turbulence**,
-**Talk** on the 7th Generation IMPRS Seminar *(Jan., 2012)*

• **Chemical sub-structure of high-mass star-forming regions**,
-**Poster** on Young Astronomers’ Meeting (YAM) , at Observatoire de Paris *(Nov., 2011)*

• **Multiband Fitting to 3 Long GRBs with Fermi/LAT Data: Structured Ejecta Sweeping up a Density-Jump Medium**
-**Talk** on "Mini Workshop for the Frontier of GRB Research", Nanjing University *(Nov., 2010)*

• **Analytical Results Modeling for the Differential Rotation Neutron Star**,
-**Talk** on "2010 Compact Star Summer School", at Nanjing University, *(Jun.,2010)*

• **The Analytical and Numerical Results of the Gamma-Ray Burst (GRB) Afterglows**,
-Talk on "Work Summary for the Qualify of Graduate Research", at Nanjing University *(Dec., 2009)*

• 9 Talks on "**Colloquium on the Gamma-ray Afterglows in the Fermi Era**", Nanjing University
http://www.mpe.mpg.de/homes/syfeng/ResearNJU.html (Feb.2009-Jun.2010)

SKILLS

Language
Chinese (Mandarin): Mother Language
English: Professional
German: Beginner
Japanese: Beginner

Technology and Computer
Package (MIRIAD, IDL, GILDAS, CASA)
Coding (C, F90, Matlab, Mathematica, Python, LaTeX)
Digital graphic and database development
Web-site development

AWARDS/FELLOWSHIP

2017-2020:	East Asian Core Observatories Association (EACOA) fellow
2017-2020:	NAOJ-ALMA fellow (declined)
2015-2017:	MPE European Research Council (ERC) postdoc fellow
2011-2014:	Marie Curie Seventh Framework Program Early Stage Researcher (ESR/PhD)
2010:	Outstanding Contribution To Chinese Astronomical Society Award
2008:	Graduate with the Highest Honor (top 5%) of Nanjing University
2008:	Excellent Bachelor Thesis of Nanjing University
2005-2008:	Undergraduate Student's Outstanding Contribution to Astronomy Outreach Award
2005-2008:	People's Scholarship for Excellence in Undergraduate Study
2006:	Outstanding Undergraduate Student Association President in Jiangsu Province of China

TEACHING & OUTREACH

2020.5:	LOC of "The 2020 East-Asian Young Astronomer Meeting" @Beijing, China
2014.6:	LOC of "The Star Formation: Data, Models and Visualization–Harvard-Heidelberg Workshop"
2014.6:	LOC of "The Early Phase of Star formation" (EPoS) @Muchen, Germany
2013.7:	LOC of "Protostar & Planets VI" (PPVI) @Heidelberg, Germany
2012.3-4:	Teaching assistant on the "Shack-Hartmann Wavefront Sensor" @ Heidelberg University & MPIA
2011-2015:	Guide tours for the planetarium @ Haus de Astronomie, Heidelberg
2008.7:	LOC of 2009 "CAS-IAU Joint Solar Eclipse Meeting" @Suzhou, China
2008.7:	LOC of 2008 "Gamma-Ray Burst Conference" @Nanjing, China

Last update: Oct. 30th 2019

List of Publications

REFEREED PAPERS

• As the first author:

(7) Feng, S., Codella, C., Caselli, P., Podio, L., Lefloch, B. "Chemical segregation of SO and SO_2 in the bow shock region L1157-B1 and B2", **accepted by ApJ**

(6) Feng, S., Caselli, P., Wang, K., Lin, Y., Beuther, H., Sipila, O., "The chemical structure of young high-mass star-forming clumps: (I) Deuteration", ApJ, vol. 883, pp. 202F, 2019

(5) Feng, S., Beuther, H., Semenov, D., Henning, T., Linz, H., Mills, E. A. C., Teague, R., "Inferring the evolutionary stages of the internal structures of NGC 7538 S and IRS1 from chemistry", A&A, vol. 593, pp. A46, 2016.

(4) Feng, S., Beuther, H., Zhang, Q., Liu, H. B., Zhang, Z., Wang, K., Qiu, K., "Outflow detection in a 70 μm dark high-mass core", ApJ, vol. 828, pp. A100, 2016.

(3) Feng, S., Beuther, H., Zhang, Q., Henning, T., Linz, H., Ragan, S., Smith, R., "Are infrared dark clouds really quiescent?", A&A, vol. 592, pp. A21, 2016.

(2) Feng, S., Beuther, H., Henning, T., Semenov, D., Palau, A., Mills, E. A. C., "Resolving the chemical substructure of Orion-KL", A&A, vol. 581, pp. A71, 2015.

(1) Feng, S.-Y., Dai, Z.-G., "Multiband fitting to three long GRBs with Fermi/LAT data: structured ejecta sweeping up a density-jump medium", RAA, vol. 11, pp. 1046-1066, 2011.

• As supervisor:

(2) Luo, G., **Feng, S.**, Qin, S., Li, D., "Sulfur chemistry in the Orion-KL", accepted by ApJ. astroph1910.01779

(1) Punanova, A. Caselli, P. **Feng, S.**+41 "Seeds of Life in Space (SOLIS). III. Zooming Into the Methanol Peak of the Prestellar Core L1544", ApJ, vol. 855, pp. 112, 2018.

• As co-author:

(15) Gieser, C. +13+ **Feng, S.**+17, "Chemical complexity in high-mass star formation: An observational and modeling case-study of the AFGL 2591 VLA 3 hot core", accepted by A&A

(14) Bosco, F. +8+ **Feng, S.**+110 "Fragmentation, rotation and outflows in the high-mass star-forming region IRAS 23033+5951. A case study of the IRAM NOEMA large program CORE", A&A, vol. 485, pp. 2895, 2019.

(13) Eden, D. +47+ **Feng, S.**+110 "SCOPE: SCUBA-2 Continuum Observations of Pre-protostellar Evolution - survey description and compact source catalogue", MNRAS, vol. 485, pp. 2895, 2019.

(12) Ahmadi, A. +13+ **Feng, S.**+17 "Core fragmentation Toomre stability analysis of W3(H_2O). A case study of the IRAM NOEMA large program CORE", A&A, vol. 618, pp. 46, 2018.

(11) Beuther, H. +13+ **Feng, S.**+16 "Fragmentation and disk formation during high-mass star formation. IRAM NOEMA (Northern Extended Millimeter Array) large program CORE", A&A, vol. 617, pp. 100, 2018.

(10) Beuther. +13+ **Feng, S.** "Magnetic fields at the onset of high-mass star formation", A&A, vol. 614, pp. 64, 2018.

(9) Lu, X. +3+ **Feng, S.**+4 "Filamentary Fragmentation and Accretion in High-mass Star-forming Molecular Clouds", ApJ, vol. 855, pp. 9, 2018.

(7) Liu, T. +42+ **Feng, S.**+110 "The TOP-SCOPE Survey of Planck Galactic Cold Clumps: Survey Overview Results of an Exemplar Source, PGCC G26.53+0.17", ApJS, vol. 234, pp. 28, 2018.

(6) Ceccarelli, C. +5+ **Feng, S.**+38 "Seeds Of Life In Space (SOLIS): The Organic Composition Diversity at 300-1000 au Scale in Solar-type Star-forming Regions", ApJ, vol. 850, pp. 176, 2017.

(5) Beuther, H., Linz, H., Henning, T., **Feng, S.** +1 "Multiplicity disks within the high-mass core NGC 7538IRS1. Resolving cm line and continuum emission at $0.06^{''}\times0.05^{''}$ resolution", A&A, vol. 605, A61, 2017.

(4) Codella, C. +8+ **Feng, S** +40 "Seeds of Life in Space (SOLIS). II. Formamide in protostellar shocks: Evidence for gas-phase formation", A&A, vol. 605, L3, 2017.

(3) Fontani, F. +8+ **Feng, S.** +21 "Seeds of Life in Space (SOLIS). I. Carbon-chain growth in the Solar-type protocluster OMC2-FIR4", A&A, vol. 605, A57, 2017.

(2) Peng, Y. +8+ **Feng, S.** +4 "ALMA Observations of Vibrationally Excited HC_3N Lines Toward Orion KL", ApJ, vol. 837, pp. 49, 2017.

(1) Beuther, H., Henning, T., Linz, H., **Feng, S.**,+5, "Hierarchical fragmentation, collapse signatures in a high-mass starless region", A&A, vol. 581, pp. A119, 2015.

Conference Proceedings

(2) Feng, S., Beuther, H., Henning, T., Semenov, D., Linz, H. "Inferring the Evolutionary Stages of High-mass Star-forming Regions from Chemistry", American Astronomical Society Meeting Abstracts #223, vol. 223, pp. 214.02, 2014.

(1) Feng, S., Beuther, H., Semenov, D., Henning, T., Palau, A., "Resolving the Chemical Substructure of Orion-KL", Protostars, Planets VI Posters, 2013.

Submitted/to be submitted as first author

(8) Feng, S., et. al. "S-bearing species in the protoplanetary disks", in prep.

(7) Feng, S., et. al. "The chemical segregation toward protostellar disk GSS30", in prep.

(6) Feng, S., Beuther, H., Liu, H. B. "The accretion flows via streaming structure of NGC7538 IRS9", in prep.

(5) Feng, S., Beuther, H. "The successive bow shocks of a high-mass disk candidate", to be submitted in Mar 2020

(4) Feng, S., Caselli, P., Codella, C., Podio, L., Lefloch, B. " Sulfur-bearing chemistry in the bow shock region L1157-B1", to be submitted in Mar. 2020

(3) Feng, S., Zhang, Z., Liu, H. B., Wang, Y., Wang, K., Gong, Y., Ao, Y., Fang, M., "Sequential physical and chemical properties of the molecular clumps along the rim of an infrared bubble", to be submitted in Jan. 2020

(2) Feng, S., Liu, H. B., Du, F., Caselli, P., Codella, C., Podio, L., Lefloch, B. "Temperature profile of bow shock region L1157 B1-B2", to be submitted in Jan. 2020

(1) Feng, S., Li, D., Lin, Y., Hoggle, T., Du, F., Zhang, Z., Wang, K., Beuther, H., "The chemical structure of young high-mass star-forming clumps: (II) pc-scale CO depletion", **submitted to ApJ**

Last update: Dec. 22 2019