# Exoplanets & Planet Formation Workshop 2025

**Location： 西山爽气厅(Xishan Shuangqi Hall)**

| **Day 1: Aug 25, 2025** | | |
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| 8:50-9:00 | | Opening Remark |
| **Session:Planet Formation** | | **Chair:Xuening Bai** |
| 9:00-9:30 | **Shigeru Ida (Special)** | **Current understanding of gas giant planet formation and circumplanetary disks** |
| 9:30-9:50 | **Beibei Liu (Invited)** | **Modeling planet formation and the dependence on stellar host properties** |
| 9:50-10:05 | Jinfei Yu | Icy Pebble Accretion and the Formation of Primordial Main Belt Asteroids |
| 10:05-10:20 | Kangrou Guo | Formation of Free-Floating Planets via Ejection: Population Synthesis with a Realistic IMF and Comparison to Microlensing Observations |
| 10:20-10:50 | | Group photo/Coffee Break |
| **Session: Gas-Dust Interaction** | | **Chair: Min-Kai Lin** |
| 10:50-11:05 | Yuya Fukuhara | Hydrodynamical simulations of the vertical shear instability with dynamic dust and cooling rates in protoplanetary disks |
| 11:05-11:20 | Shiang-Chih Wang | Azimuthal-drift streaming instabilities in accreting protoplanetary disks |
| 11:20-11:35 | Qiang Hou | Streaming Torque in Dust-Gas Coupled Protoplanetary Disks |
| 11:35-11:50 | Jiaqing Bi | Shoulder of Dust Rings Formed by Planet-disk Interactions |
| **Session: Gas Disk Dynamics & Evolution** | | **Chair: Satoshi Okuzumi** |
| 14:30-14:50 | **Ryouhei Nakatani (Invited)** | **Revisiting Protoplanetary Disk Dispersal** |
| 14:50-15:05 | Shoji Mori | Thermal Structure and Evolution of Magnetized Protoplanetary Disks: Implications for Planet Formation |
| 15:05-15:20 | Haruhi Enomoto | A local non-Ideal MHD framework consistent with global magnetic-field structures in protoplanetary disks |
| 15:20-15:35 | Jing Yang | Radiation hydrodynamic models of circumplanetary disks |
| 15:35 - 16:05 | | Coffee Break |
| **Session: Atmosphere Physics and Evolutions** | | **Chair: Kazumasa Ohno** |
| 16:05-16:25 | **Jianheng Guo(Invited)** | **Hydrodynamic escape of hydrogen-rich atmosphere in close-in exoplanets** |
| 16:25-16:40 | Helong Huang | How turbulent diffusivity changes the exoplanet clouds composition: a sweet spot Kzz for silicate feature |

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| 16:40-16:55 | Zhong Wei | Irradiated Atmosphere V: Effects of Vertical-Mixing induced Energy Transport on the Inhomogeneity |
| 16:55-17:13 | Poster presentation | poster #1 to # 12;  1.5 minutes for each |
| **Lin-bridge Undergraduate Forum** | | **Chair: Jiwei Xie** |
| 19:00-19:12 | Yi Huang | Study on the origin of water on Earth and its distribution across Earth's spheres in the process of planetary formation |
| 19:12-19:24 | Haolin Li | Detecting Lava Oceans on Hot Exoplanets Using the Glint Effect |
| 19:24-19:36 | Ruiqi Yang | Misaligned circumbinary discs around unequal-mass eccentric binaries: alignment, morphology, and binary accretion variability |
| 19:36-19:48 | Yangjun Pu | Massive Retrograde Moons May Survive During Different Hot Jupiters' Migration Scenario |
| 19:48-20:00 | Bohang Zhu | Simulation and Modeling of Interferometric Imaging for Binary Systems |
| 20:00-20:12 | Zhiqi Zhang | Probing Magnetic Fields in Protoplanetary Disks through Polarized Scattering by Magnatically Aligned Dust Grains |
| 20:12-20:24 | Xiang Ji | The interior structure of gas-water worlds |

## Day 2: Aug 26, 2025

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| **Session: Exoplanet Demographics and Characterization(I)  Chair: Jiwei Xie** | | |
| 9:00-9:20 | **Di-Chang Chen (Invited)** | **Hot Jupiter Origin and Tidal Evolution Constrained by the Age–Frequency Relation** |
| 9:20-9:35 | Bo Ma | Measuring Exoplanet Orbital Decay using TTV |
| 9:35-9:50 | Huigen Liu | Photo-dynamical Analysis of TOI-1338: A Fully Coplanar Configuration with a Puffy Planet |
| 9:50-10:05 | Peiwei Tu | PAST. VI. Age Dependence of the Occurrence and Architecture of Ultra-Short-Period Planet Systems |
| 10:05-10:40 | | Coffee Break |
| **Session: Disk Observation (I)  Chair: Hauyu Baobab Liu** | | |
| 10:40-11:00 | **Akimasa Kataoka(Invited)** | **Dust properties and planet formation revealed by ALMA observations** |
| 11:00-11:20 | **ThiemHoang (Invited)** | **Alignment, Dust Polarization, and Dust Evolution in Protoplanetary Disks and Planetary Systems** |
| 11:20-11:35 | Yangfan Shi | Constraining Dust Property and Test Dust Trapping in the Outer Ring of MWC 480 by ALMA and VLA Observations |
| 11:35-11:50 | Tomohiro Yoshida | Revealing Gas Surface Density Profiles in Protoplanetary Disks via Pressure-Broadened CO Line Wings |
| **Session:Atmosphere and Enviroment  Chair: Jianheng Guo** | | |
| 14:30-14:50 | **Xianyu Tan (Invited)** | **Modeling the atmospheric circulation and spectra of cloudy hot Jupiters** |

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| 14:50-15:05 | Wenzhan Ouyang | Constraining the early atmospheric evolution of the TRAPPIST-1 system through dynamical signatures |
| 15:05-15:20 | Junda Zhou | Estimating Stellar Age Based on Planetary Water Content Inversion: The Case of GJ 486b |
| 15:20-15:35 | Tamami Okamoto | Jovian atmosphere's noble gas enrichment via disk photoevaporation |
| 15:35 - 16:05 | | Coffee Break |
| **Session:Inner Disk Chair: Yuri Fujii** | | |
| 16:05-16:25 | **Feng Long (Invited)** | **Chemical evolution in the inner region of protoplanetary disks** |
| 16:25-16:45 | **Shinsuke Takasao (Invited)** | **Stellar-scale processes shaping the inner boundary conditions of protoplanetary disks** |
| 16:45-17:00 | Tianhao Li | Dust transport with local simulation of PPD |
| 17:00-17:15 | Ryo Kato | Rocky planetesimal formation in thermally unstable inner regions of protoplanetary disks |
| 17:15-17:30 | Yisheng Tu | Magnetic Pressure Driven Outflows: Lightly Loaded Jets and Dense Disk Winds in Protostellar Systems |

## Day 3: Aug 27, 2025

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| **Session: Planetary Dynamics Chair: Takayuki Muto** | | |
| 9:00-9:20 | **Yukun Huang(Invited)** | **An Analytical Solution for Planet-Scattering Small Bodies** |
| 9:20-9:35 | Chris Ormel | A Resonant Beginning for the Solar System Terrestrial Planets |
| 9:35-9:50 | Masahiro Ogihara | A coherent model for the formation and period ratio evolution of super-Earth systems |
| 9:50-10:05 | Qingru Hu | Early Stellar Flybys are Unlikely under New Constraints from Sednoids and Large-q TNOs |
| 10:05-10:20 | Zhecheng Hu | Unexpected Near-Resonant and Metastable States in Young Multi-Planet Systems |
| 10:20-10:50 | | Coffee Break |
| **Session: Early Disk Dynamics Chair: Cong Yu** | | |
| 10:50-11:10 | **Hongping Deng (Invited)** | **Gravitationally instability in circumstellar disks** |
| 11:10-11:25 | Yang Ni | Direct Formation of Gas Giants via Disk Fragmentation in 3D Radiation Hydrodynamic Simulations |
| 11:25-11:40 | Jiachen Zheng | Turbulent infall onto class 0 disks as cause of CAI brief condensation episode in the solar system |
| 11:40-12:00 | Poster presentation | poster #13 to # 25; 1.5 minutes for each |

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| **Free Discussion** |

## Day 4: Aug 28, 2025

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| **Session: Exoplanet Demographics and Characterization(II) Chair: Beibei Liu** | | |
| 9:00-9:20 | **Wei Zhu (Invited)** | **Giant planets are lonelier than expected (Jiayin Li)** |
| 9:20-9:40 | **SharonXuesong Wang (Invited)** | **Search and Characterize Earth-like Planets with CHORUS** |
| 9:40-9:55 | Yaxing He | Impact-Driven Atmospheric Mass Loss in Sub-Neptune Systems: Origins of the Radius Gap and Its Intermediate Planets |
| 9:55-10:10 | Quanyi Liu | Transiting super Earths in known RV systems and the implication to the inner-outer correlation |
| 10:10-10:25 | Wu Di | Planets Across Space and Time (PAST). VIII: Kinematic Characterization and Identification of Radial Velocity Variables for the LAMOST-Gaia-TESS Stars |
| 10:20-10:50 | | Coffee Break |
| **Session: Disk Observations (II) Chair: Feng Long** | | |
| 10:50-11:10 | **Haifeng Yang(Invited)** | **Millimeter disk polarization from protoplanetary disks** |
| 11:10-11:30 | **Chin-Fei Lee (Invited)** | **Polarization Substructure in the Spiral-dominated HH 111 Disk: Evidence for Grain Growth** |
| 11:30-11:45 | Haochang Jiang | Diverse Planet-Forming Chemistry in Herbig Disks of the Taurus Star-Forming Region |
| 11:45-12:00 | Naoya Kitade | Numerical solutions of radiative transfer in a parallel-slab incorporating millimeter wavelength scattering polarization for protoplanetary disks |
| **Session: Planet-Disk Interaction Chair: Yuhiko Aoyama** | | |
| 14:30-14:45 | Yinhao Wu | Planets Migration in Turbulent Environment |
| 14:45-15:00 | Bingjie Zha | Modeling Planetary Accretion Shocks with a Realistic Equation of State and a Physics-Informed Neural Network |
| 15:00-15:15 | Junpeng Pan | Concurrent Accretion and Migration of Giant Planets in Protoplanetary Disks |
| 15:15-15:30 | Shizu Shimizu | The Effect of Shock Heating Induced by Giant Planets on the Location of the Snow Line in Protoplanetary Disks |

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## Poster List

| Number | Name | Title |
|---|---|---|
| 1 | Yuhiko Aoyama | Radio Emission from PDS 70 c: A Free-Free Origin rather Dust? |
| 2 | Jinfei Yu | Icy Pebble Accretion and the Formation of Primordial Main Belt Asteroids |
| 3 | Michael Hammer | An MHD-based model for wind-driven disc-planet interactions |
| 4 | Min-Kai Lin | Radial convection in protoplanetary disks |
| 5 | Pinghui Huang | Dust Clumping in Outer Protoplanetary Disks: the Interplay Among Four Instabilities |
| 6 | Hauyu Baobab Liu | Updated Constraints on Dust Mass Budget and Dust Sizes in Class II Disks |
| 7 | Haibin Ren | Planet search in microlensing enabled by differentiable code |
| 8 | Kazumasa Ohno | Possible Metal-dominated Atmosphere on the Archetype Hazy Sub-Neptune GJ 1214 b Suggested by Its JWST Panchromatic Transmission Spectrum |
| 9 | Beibei Liu | Early Solar System dynamical instability triggered by dispersal of Sun’s gaseous disk |
| 10 | Masanobu Kunitomo | From dust to neutrinos: Toward a unified view of the Solar System formation |
| 11 | Xiumin Huang | Free-floating planets produced by planet-planet scattering: ejection velocity and survival rate of their moons |
| 12 | Courteney Monchinski | Effects of water vapor on the evolution of an impact-generated disk around Mars and the subsequent accretion of moons |
| 13 | Satoshi Okuzumi | Bridging the gap: consistent modeling of protoplanetary disk heating and gap formation by planet-induced spiral shocks |
| 14 | Sheng Jin | Constraining the physical properties of gas giants from their statistical distributions |
| 15 | Tang Miaoyin | Shallow-water Magnetohydrodynamics in Hot Jupiter Atmospheres |
| 16 | Min Li | The effects of the carbon-to-oxygen ratio on the condensate compositions around Solar-like stars |
| 17 | Naoya Torii | Gap Edge Structures Created by Perturbations from a Small Satellite Embedded in Saturn's Rings |

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| 18 | Takayuki Muto | A Transitional Disk around a Star with a Transit Planet: IRAS 04125+2902 |
| 19 | Takayuki Tanigawa | Development of a Dust Diffusion Model Applicable to High Dust-to-Gas Ratio Environments: Evolution of Dust Density Distribution Near Planetary Gaps |
| 20 | Xinyu Zheng | Decoding CO Ro-vibrational Line Shape Diversity in Protoplanetary Disks: Winds or UV-Heated Outer Disk Surfaces? |
| 21 | Zhixuan Li | A new 1D numerical model to follow the formation of satellites |
| 22 | Yuxin Guo | Dust Mass Evolution in Corona Australis: Results from an ALMA Survey of 108 Protoplantary Disks |
| 23 | Zhentai Zhang | Irradiated Atmospheres IV: Effect of Mixing Energy Flux on Chemistry |
| 24 | Lily Ishizaki | “Reaction Line” for a Viscously Evolving Disk |