Name:Wasim Iqbal

Professional:

Doctoral Supervisor

Associate Researcher at Xinjiang Astronomical Observatory, CAS

Education:

- **2009 - 2014: PhD in Physics (theoretical)**, University of Calcutta, India.
  PhD work was done at S. N. Bose National Centre for Basic Sciences, Kolkata-700 098, India.
  Area of research: Astro-chemistry.
  Thesis: Study of formation of molecules in the star forming regions using continuous time random walk Monte Carlo simulation.
  Supervisor: Dr. Kinsuk Acharyya, Planetary Science and Exploration Division, Physical Research Laboratory, India, ✉: acharyya@prl.res.in.

- **2007 - 2009: Masters in Physics**, Banaras Hindu University, India.
  Specialization: Electronics.

- **2004 - 2007: Bachelor of Science with honors in Physics**, Burdwan University, India.
  Majors: Physics (Honors), Chemistry, Math.

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Research Interests:

- **Astrochemical modeling:** Developing state of the art chemical model to study chemical evolution in cold cores and protoplanetary disks. Studying the chemical evolution of molecular clouds, planetary nebulae.
- **Radio astronomy (mm and sub-mm observations):** Using single-dish and interferometric data to study the chemistry towards molecular clouds, pre-stellar regions, proto-stars and proto-planetary disks.

Selected Publications:

1. XiaoYing Guo;, **Iqbal, W** ✱.; Qiang Chang; Xiaohu Li, *Understanding the impact of H2 diffusion energy on the formation efficiency of H2 on the interstellar dust grain surface*, Research in Astronomy and Astrophysics, in press, 2024, [URL].

2. **Iqbal, W*;** Xiaohu Li; Juan Tuo; Ryszard Szczerba; et al. *Exploring Sulfur Chemistry in TMC-1 with NSRT*, Chinese Physics Letters, 41,029501, 2024, [URL].

3. Suman, K.M.; **Iqbal, W*.**; Prasanta, G.; Bratati, B.; Wakelam, V.; Das, A., *Investigating the hot molecular core, G10.47+0.03, a pit of nitrogen-bearing complex organic molecules,* A&A, 669, A71, 2023 [URL].

4. Gavino, S.; Dutrey, A.; Wakelam, V.; Guilloteau, S.; Kobus, J.; Wolf, S.; **Iqbal, W.**; Di Folco, E.; Chapillon, E.; Piétu, V., *Impact of size-dependent grain temperature on gas-grain chemistry in protoplanetary disks: The case of low-mass star disks,* A&A, Volume 654, id. A65, 39 pp, October 2021, [URL].

5. Wakelam, V.; **Iqbal, W.**; Melisse, J. -P.; Gratier, P.; Ruaud, M.; Bonnell, I., *Influence of galactic arm scale dynamics on the molecular composition of the cold and dense ISM III. Elemental depletion and shortcomings of the current physico-chemical models*, MNRAS, Volume 497, Issue 2, pp.2309-2319, September 2020, [URL].

6. Wakelam, V.; Chapillon, E.; Dutrey, A.; Guilloteau, S.; **Iqbal, W.**; Coutens, A.; Majumdar, L., *Protoplanetary discs: sensitivity of the chemical composition to various model parameters*, MNRAS, Volume 484, Issue 2, p.1563-1573, April 2019, [URL].

7. **Iqbal, W.**; Wakelam, V.; Gratier, P., *Statistical study of uncertainties in the diffusion rate of species on interstellar ice and its impact on chemical model predictions*, A&A, Volume 620, id. A109, 13 pp, December 2018, [URL].

8. **Iqbal, W.**; Wakelam, V., *Nautilus multi-grain model: Importance of cosmic-ray-induced desorption in determining the chemical abundances in the ISM*, A&A, Volume 615, id. A20, 16 pp, July 2018, [URL].

9. **Iqbal, W.**; Acharyya, Kinsuk; Herbst, Eric, *H_2 Formation in Diffuse Clouds: A New Kinetic Monte Carlo Study*, ApJ, Volume 784, Issue 2, article id. 139, 13 pp, April 2014, [URL].

10. **Iqbal, W.**; Acharyya, Kinsuk; Herbst, Eric, *Kinetic Monte Carlo Studies of H_2 Formation on Grain Surfaces over a Wide Temperature Range,* ApJ, Volume 751, Issue 1, article id. 58, 13 pp, May 2012, [URL]