Junais

Curriculum Vitae
October 2023

PERSONAL INFORMATION

First name: Junais

Last name: Junais[1]

Date of birth: 27/04/1995

Nationality: Indian

Professional Address: ul. Ludwika Pasteura 7, 02-093 Warsaw, POLAND

E-mails: junais@ncbj.gov.pl (work), junais2009@gmail.com (personal)

PROFESSIONAL EXPERIENCE

Position	Post-doctoral researcher (Assistant Professor)
Period	01/12/2021 to present
Institute	Astrophysics division (BP4) of the National Center for Nuclear Research (NCBJ), Warsaw, Poland
Title of the project	ASTROdust - a complete census of dust attenuation in galaxies based on the analysis of millions of galaxies observed by Herschel
Main activities	Constraining dust attenuation in low surface brightness galaxies using multi-wavelength photometric data and spectral energy distribution fitting techniques
Supervisor	Katarzyna Małek

EDUCATION

Degree	Ph.D. in Astrophysics and Cosmology
Period	01/10/2018 to 22/09/2021
Date of defense	22/09/2021
Institute	Laboratoire d'Astrophysique de Marseille (LAM), France
Title of thesis	Star formation and its history in low surface brightness galaxies
Main activities	Study of kinematics and the role of environment in the evolution of low surface brightness galaxies using spectroscopic and photometric data.
Supervisor:	Samuel Boissier

Degree	Masters in Astrophysics
Period	01/10/2016 to 30/09/2018
Institute	Aix Marseille University, Marseille, France
Master thesis	First spectroscopic study of ionized gas emission lines in the extreme Malin 1 galaxy

[1] As per my official documents (e.g., passport) I only have a single name 'Junais', without a last name. It is not unusual for Indian nationalities. When it is mandatory for administrative purposes to provide a last name, I generally use the first name twice.

Degree	Bachelors in Physics (with Honours)
Period	01/06/2013 to 30/06/2016
Institute	University of Delhi, Hindu College, New Delhi, India

PEER-REVIEWED PUBLICATIONS

1. *MUSE observations of the giant low surface brightness galaxy Malin 1: Numerous HII regions, star formation rate, metallicity, and dust attenuation*
   Junais, Weilbacher, Epinat et al., A&A, in press, arXiv:2310.11872 (2023)

2. *Shedding Light on Low Surface Brightness Galaxies in Dark Energy Survey with Transformers*
   Thuruthipilly, **Junais**, Pollo et al., A&A, in press (2023)

3. *X-ray luminosity - star formation rate scaling relation: constraints from the eROSITA Final Equatorial Depth Survey (eFEDS)*
   Riccio et al., **(author position 5/10),** A&A, in press, arXiv:2309.03578 (2023)
   This is a paper led by a Ph.D. student, where I am the co-supervisor and the 5th author. I contributed 20% of this work in the data analysis.

4. *Decoding the IRX-β dust attenuation relation in star-forming galaxies at intermediate redshift*
   Hamed et al., **(author position 10/14),** A&A, in press, arXiv:2309.01819 (2023)
   This is a paper led by a Ph.D. student, where I am the co-supervisor and the 10th author. I contributed 10% of this work in data analysis and the writing process.

5. *Variation in optical and infrared properties of galaxies in relation to their surface brightness*
   Junais, Małek, Boissier et al., A&A, 676, A41 (2023)

6. *The slippery slope of dust attenuation curves. Correlation of dust attenuation laws with star-to-dust compactness up to z = 4*
   Hamed, Małek, Buat, **Junais** et al., A&A, 674, A99 (2023)
   I am the fourth author of this work with a total of 30% contribution in estimating the morphology of the galaxies. Also, I am the Ph.D. co-supervisor of the lead author.

7. *Star-formation driven outflows in local dwarf galaxies as revealed from [CII] observations by Herschel*
   Romano et al., **(author position 7/9)**, A&A, 677, A44 (2023)
   I am the 7th author of this work with a contribution of 10% in the writing process.

8. *In pursuit of giants: II. Evolution of dusty quiescent galaxies over the last six billion years from the hCOSMOS survey*
   Donevski et al., **(author position 12/14)**, A&A, in press, arXiv:2304.05842 (2023)
   I contributed to the analysis of the relation between the metallicity and the dust content of the sample of galaxies (15% contribution in the analysis and writing process).

9. *The first catalogue of spectroscopically confirmed red nuggets at z ~ 0.7 from the VIPERS survey. Linking high-z red nuggets and local relics*
   Lisiecki et al., **(author position 7/7)**, A&A, 669, A95 (2023)
   I contributed (10%) to the interpretation of the sample properties with respect to the GALFIT morphological fitting.

10. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE). XIV. Main-sequence relation in a rich environment down to Mstar ≃ 10^6 Msun*

Boselli et al., **(author position 15/18)**, A&A, 669, A73 (2023)
I contributed (20%) by making the models for analyzing the role of environment in the evolution of the galaxies studied in this work.

11. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE). XIII. The role of ram-pressure stripping in transforming the diffuse and ultra-diffuse galaxies in the Virgo cluster*
Junais, Boissier, Boselli et al., A&A, 667, A76 (2022)

12. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE). XI. Two-dimensional Hα kinematics of the edge-on ram pressure stripped galaxy NGC 4330*
Sardaneta et al., **(author position 14/21)**, A&A, 659, A45 (2022)
I made a 10% contribution in the writing process.

13. *A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE). X. Formation of a red ultra-diffuse galaxy and an almost dark galaxy during a ram-pressure stripping event*
Junais, Boissier, Boselli et al., A&A, 650, A99 (2021)

14. *CASTLE: Performances and science cases*
Lombardo et al., **(author position 15/26),** non-refereed**,** arXiv:2006.13956 (2020)
I made a 20% contribution in developing the science case for the observation of giant low surface brightness galaxies with the upcoming instrument CASTLE.

15. *First spectroscopic study of ionised gas emission lines in the extreme low surface brightness galaxy Malin 1*
Junais, Boissier, Epinat et al., A&A, 637, A21 (2020)

CONFERENCE PROCEEDINGS

1. *Unsupervised classification reveals new evolutionary pathways*
Proceedings of the International Conference on Machine Learning for Astrophysics
Siudek et al., **(author position 8/8),** arXiv, arXiv:2211.11792 (2022)

2. *New Directions in Multi-Wavelength Astrophysics: Using Radio Data to Uncover Properties of Star-Forming Galaxies in the Young Universe*
Proceedings of the Polish Astronomical Society Meeting (PTA)
Małek, Donevski, Hamed, **Junais** et al., pas..conf, Eds. Szuszkiewicz et al., 12, 17 (2022)

3. *A spectroscopic study of the giant low surface brightness galaxy Malin 1*
Proceedings of the Annual meeting of French Society of Astronomy and Astrophysics (SF2A)
Junais & Boissier, sf2a.conf, Eds. Di Matteo et al., 249 (2019)

4. *Studying Ultra Diffuse Galaxies in Virgo with CFHT-NGVS, GALEX-GUViCS and CFHT-VESTIGE*
Proceedings of the Annual meeting of French Society of Astronomy and Astrophysics (SF2A)
Boissier & **Junais**, sf2a.conf, Eds. Di Matteo et al., 237 (2019)

PUBLICATION METRICS

The following metrics are based on the NASA ADS database		**Totals**	**Refereed**
All papers	Number of papers	17	8
	Total citations	48	45
	Number of self-citations	12	12

	Refereed citations	41	39
	h-index	5	5
First author papers	Number of papers	5	4
	Total citations	28	27
	Number of self-citations	4	4
	Refereed citations	25	24
	h-index	3	3

INVITED TALKS

1. *"Estimation of galaxy physical properties using SED fitting techniques in the LSST era"*
   LSST@Europe5 conference, Poreč (Croatia), September 2023

2. *"Predictions on the gas content of ultra-diffuse galaxies in the Virgo cluster"*
   Low surface brightness galaxies in the SKA era meeting, Paris (France), December 2022

CONTRIBUTED TALKS

1. *"Exploring the dust content of Low Surface Brightness Galaxies with multi-wavelength observations"*
   Rubin Galaxies Collaboration Meeting, Paris (France), June 2023

2. *"Strong evidence of ram-pressure stripping in low surface brightness galaxies of the Virgo cluster"*
   HERA workshop, Garching (Germany), March 2023

3. *"Transformation of gas-rich ultra-diffuse galaxies into quiescent ones due to ram-pressure stripping in the Virgo cluster"*
   2nd Roman Juszkiewicz Symposium, Warsaw (Poland), September 2022

4. *"Strong evidence for ram-pressure stripping in diffuse and ultra-diffuse galaxies in the Virgo cluster"*
   Journées scientifiques "Galaxies" du PNCG, Strasbourg (France), June 2022

5. *"On the role of environment in the evolution of low surface brightness galaxies in the Virgo cluster"*
   European Astronomical Society Annual Meeting, Symposium S12, online talk, July 2021

6. *"Studying giant low surface brightness galaxies like Malin 1 with current and future spectroscopic facilities"*
   Indo-French CEFIPRA astronomy meeting (IFCAM), online talk, March 2021

SEMINARS

1. *"Star formation and its history in Low Surface Brightness Galaxies"*
   National Center for Nuclear Research (NCBJ), Warsaw (Poland), December 2021

2. *"Diffuse galaxies: From low mass Ultra Diffuse Galaxies to the giant Malin 1"*
   Stony Brook University, New York (USA), November 2019

FELLOWSHIPS AND GRANTS

1. PHC Polonium travel grant by the Polish Ministry (NAWA) for Poland‑France collaboration in the study of low surface brightness galaxies. I am the Co-I of this grant (PI: Katarzyna Małek). Grant number: BPN/BFR/2022/1/00005 *(5600 euros; 2022-2024)*
2. Co-I of a grant by LAM (France) to buy an Hα narrow-band filter at the redshift of Malin 1 *(4000 euros; 2021)*.

3. Ecole Doctoral (ED352) Ph.D. fellowship by Aix Marseille University, France *(61200 euros; 2018-2021)*
4. AMIDEX fellowship for Master studies by Aix Marseille University, France *(16000 euros; 2016-2018)*
5. INSPIRE Scholarship for Bachelor studies by the Department of Science & Technology, India *(660 euros; 2013-2016)*

SUCCESSFUL TELESCOPE PROPOSALS

1. PI of a proposal for the observation of two giant low surface brightness galaxies using the Astrosat Ultraviolet Imaging Telescope (UVIT)
2. Co-I of a proposal for the Legacy survey of the Virgo cluster using UVIT (PI: Alessandro Boselli).
3. Co-I of a VLT/MUSE proposal for the IFU observation of the galaxy Malin 1 (PI: Gaspar Galaz).

SUPERVISION

Co-supervisor of three Ph.D. students (2 fourth-year students and one third-year student) at the National Center for Nuclear Research (NCBJ), Warsaw, Poland

REFEREEING ACTIVITY

- Referee for Gemini Observatory GMOS spectrograph observation proposals
- Co-referee for MNRAS journal

ACTIVE COLLABORATIONS

- LSST Galaxies Science Collaboration (LSST GSC), with early data access rights
- The Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE) - PI: Dr. Alessandro Boselli (LAM, France)
- Dr. Katarzyna Małek (NCBJ, Poland)
- Dr. Samuel Boissier (LAM, France)
- Dr. Jin Koda (Stony Brook University, USA)
- Prof. Sugata Kaviraj (University of Hertfordshire, UK)

LANGUAGES

Professional working proficiency: English
Native or bilingual proficiency: Malayalam
Elementary proficiency: Hindi, Tamil, French

SCIENTIFIC AND TECHNICAL SKILLS

- Advanced knowledge of galaxy formation and evolution, in particular, low surface brightness galaxies
- Expertise in UV, optical and IR photometric and spectroscopic data
- Advanced knowledge to analyse large amount of telescope observational data from surveys
- Programming language skills: Python, Fortran, Mathematica, Matlab
- Software skills: IRAF, DS9, Topcat, Aladin, LATEX
- Familiar operating systems: Linux, Windows, Mac