



Department of Mathematics, School of Sciences
Maulana Azad National Urdu University (Central University)
Gachibowli, Hyderabad, Telangana-500032, India
☎ +91-9866619519
✉ hasan.najam@gmail.com

SYED NAJAMUL HASAN | Professor

CURRENT DESIGNATION/ INVOLVEMENT Currently working as a **Professor** in Department of Mathematics, School of Sciences, Maulana Azad National Urdu University (Central University), Hyderabad, Telangana, India.

AREA OF SPECIALIZATION Celestial Mechanics & Dynamical Astronomy,
Clifford Algebras & its applications

ONGOING ACADEMIC RESEARCH/PROJECTS IAU-OAD AstroSprint Project
<https://www.astro4dev.org/astronomical-data-analysis-lecture-videos/>

INNOVATION WITH FIELD OF STUDY AND COLLABORATIVE EFFORTS Collaborative research with scientists of IIAp Bangaluru (in observational astronomy) and IIT-Hyderabad (galaxy interaction simulations)

ACADEMIC AND ADMINISTRATIVE EXPERIENCE

- More than 25 years of teaching experience at masters level
- Administrative experience:
 - Dean, School of Sciences (May 2016- May 2019)
 - Dean, Research & Consultancy, MANUU (May 2017-18)
 - Director, IQAC (Jan 2015 – 2016)
 - Dean, Academic Affairs (Nov 2014- May16)
 - Head, Department of Mathematics (Oct 2014- 2019)
 - Chairperson, Arts & Science College, Budgam, Srinagar (2015-2016)
 - Head, Department of Astronomy, Osmania University, Hyderabad, India. (till 2014)
 - In-charge Director, Japal-Rangapur & Nizamiah Observatories, Hyderabad, India. (till 2014)
 - Placements Officer, University College of Science, Osmania University. (till 2014)
 - Convener, Science Centre, Japal-Rangapur Observatory. (till 2014)

EDUCATIONAL
QUALIFICATION

- **DOCTOR OF PHILOSOPHY (Ph.D.), 1993**
Department of Mathematics, Moscow State University, Russia
- M.PHIL
Department of Mathematics, University of Hyderabad, India

TEACHING
PROFICIENCY

Over 25 years teaching experience at post graduate level.

RESEARCH
PUBLICATION
DETAILS

[TITLE](#)

[The galaxy population of the core of the Coma cluster](#)

Nagamani Poloji, Priya Hasan, S N Hasan

Monthly Notices of the Royal Astronomical Society, Volume 510, Issue 3, March 2022,

Pages 4463–4472, <https://doi.org/10.1093/mnras/stab3427>

[Membership of stars in open clusters using random forest with gaia data](#)

M Mahmudunnobe, P Hasan, M Raja, SN Hasan

The European Physical Journal Special Topics 230 (10), 2177-2191

[Membership of stars in open clusters using Random Forest with Gaia data](#)

SNH Md Mahmudunnobe, Priya Hasan, Mudasir Raja

European Physical Journal Special Topics

[Astronomy Education in Covid Times](#)

P Hasan, SN Hasan

Proceedings of the International Astronomical Union 15 (S367), 409-410

[Astronomy Data, Virtual Observatory and Education](#)

P Hasan, SN Hasan

Proceedings of the International Astronomical Union 15 (S367), 151-154

[The System of Open Star Clusters Revisited](#)

P Hasan, SN Hasan

International Conference on Modeling, Machine Learning and Astronomy, 130-143

[Effect of the gas percentage on the thickness of the galactic discs during minor mergers using hydrodynam](#)

S Thakkalapally, P Hasan, SN Hasan

Proceedings of the International Astronomical Union 14 (S353), 281-283

[I-convergent difference sequence spaces](#)

VA Khan, M Ahmad, SN Hasan, R Ahmad

Journal of Mathematical Analysis 10 (2), 58-68

[Dwarf Galaxies in the Core of Coma Cluster](#)

SN Hasan, P Shah, P Nagamani

Proceedings of the International Astronomical Union 14 (S344), 417-419

[A New type of Generalised B-Difference Sequence Space](#)

R Ahmad, SN Hasan

International Journal of Modern Mathematical Sciences 15 (3)

[Existence of Librational Points in the Photogravitational Elliptic Restricted Three Body Problem](#)

RKKVH S N

International Journal of Innovative Research in Science, Engineering ...

[Luminosity decomposition profiles of pairs of spiral galaxies](#)

HPSNH P Nagamani

ASI conference series, 2015, EA-35, ASI2015_713

[Dynamics of Star Clusters Observations and Simulations](#)

P Hasan, SN Hasan

New Advances in Physics 8, 63-71

[Spinors and Their Applications to Track near Earth Objects](#)

A Lakshmi, SN Hasan

IOSR Journal of Applied Physics 1 (3), 1-9

[Mass segregation in diverse environments](#)

P Hasan, SN Hasan

Monthly Notices of the Royal Astronomical Society 413 (4), 2345-2357

[The structure and dynamics of young star clusters: King 16, NGC 1931, NGC 637 and NGC 189](#)

P Hasan, SN Hasan, U Shah

Astrophysics and Space Science 318 (1), 25-33

[Evolutionary studies of the young star clusters: NGC 1960, NGC 2453 and NGC 2384](#)

P Hasan, GC Kilambi, SN Hasan

Astrophysics and space science 313 (4), 363-371

[Dynamical evolution of a young stellar aggregate in the presence of a massive shell of gas using N-body simulation](#)

PHSN Hasan

Bulletin of the Astronomical Society of India Proceedings 25, 61

[Dynamical evolution of a young stellar aggregate in the presence of a massive shell of gas using N-body simulation](#)

P Hasan, SN Hasan

Bulletin of the Astronomical Society of India Proceedings 25, 61

[Stability of planar libration points for the photogravitational restricted three body problem](#)

SN Hasan

Bulletin of the Astronomical Society of India Proceedings 25, 42

[KD Abhyankar-Obituary](#)

SN Hasan

BULLETIN OF THE ASTRONOMICAL SOCIETY OF INDIA 35 (4), 739-740

[Interactions and mergers of galaxies](#)

SM Alladin, SN Hasan

Resonance 12 (3), 13-26

[The dynamics of ejecting stellar systems](#)

K Narasimhan, SN Hasan, SM Alladin

Astrophysics and Space Science 305 (1), 49-55

[The Dynamics of Ejecting Stellar Systems](#)

SN Hasan, K Narasimhan, SM Alladin

IAU Joint Discussion 26, 22

[The Dynamics of Ejecting Stellar Systems](#)

K Nasasimhan, SN Hasan, SM Alladin

Bulletin of the Astronomical Society of India 33, 406-406

[Scattering in a parabolic encounter of a single star with a circular binary](#)

SN Hasan, SG Tagare, SM Alladin

Astronomical Society of India

[Periodic Solutions to Hill's Photogravitational Problem](#)

SN Khasan

Cosmic Research 34 (4), 411

[Librational solutions to the photogravitational restricted three-body problem.](#)

SN Khasan

Kosmicheskie Issledovaniia 34 (2), 159-165

[Three-dimensional periodic solutions to the photogravitational hill problem](#)

SN Khasan

Cosmic research 34 (5), 504-507

[The change in angular momentum of a circular binary in a parabolic encounter](#)

SN Hasan

Bulletin of the Astronomical Society of India 23, 446

[The Galaxy Population of the Core of Coma Cluster](#)

PHSNH Nagamani P.

MNRAS (Accepted) arXiv preprint 2111.11814

[Spinors as a tool to compute orbital ephemeris](#)

A Lakshmi, SN Hasan

- Hasan, Priya, Kilambi, G C & Hasan S N, Evolutionary Studies of Young Star Clusters: NGC 1960, NGC 2453 and NGC 2384, Astrophysics and Space Science, 2008, Vol 313, No 4, 363-371, **ISSN:** 0004-640X (Print) Online **eISSN:** 1572-946
- Priya Hasan, S N Hasan & Urmi Shah, The structure and formation of young star clusters: King 16, NGC 1931, NGC 637 and NGC 189, Astrophysics and Space Science, 2008, Vol 318, 1-2, 2533., **ISSN:** 0004-640X (Print) Online **eISSN:**1572-946X
- Hasan, Priya, & Hasan, S N , Dynamical Evolution of a young stellar aggregate in the presence of a massive shell of gas using Nbody simulations , 61, Proceedings of the 25 th meeting of the Astronomical Society of India, Special Issue, BASI, 2008.
- Hasan, Priya, & Hasan, S N , Multicolor observations of the young clusters NGC 1931, NGC 189 and NGC 637 (poster at NSSS2008, submitted to BASI, 2008)
- Hasan, Priya, Hasan S N & Shah, Urmi, Is mass segregation in star clusters primordial?, (poster at ASI2009, submitted to BASI)
- Hasan, Priya, & Hasan, S N, Multivariate Analysis of Star Clusters, (poster at ASI2009, submitted to BASI)
- Hasan, Priya, & Hasan, S N, The dynamics of mass segregation in star clusters, Interstellar Matter and Star Formation: A Multiwavelength Perspective, ASI Conference Series, 2010, Vol. 1, pp 229–231 , Edited by D. K. Ojha, **ISBN:** 978-81-8465-441-7 .
- Hasan, Priya, & Hasan, S N, Mass segregation in diverse environments, Monthly Notices of the Royal Astronomical Society, 2011, Volume 413, Issue 4, pp. 23452357, **ISSN** 1365-2966 - Print Online **eISSN:** 0035-8711
- Dynamics of Star Clusters: Observations and simulations, S. N. Hasan and Priya Hasan, New Advances in Physics, Vol. 8, No. 1, January-June 2014, pp. 63-71, **ISSN** : 0974-3553
- Hasan, Priya, Hasan, S N, The Initial Mass Function of Open Star Clusters, New Advances in Physics, Vol. 8, No. 1, January-June 2014, pp. 73-80, **ISSN** : 0974-3553
- P Nagamani, Hasan, Priya, S N Hasan, Luminosity decomposition profiles of pairs of spiral galaxies, ASI conference series , 2015, EA-35, ASI2015_713
- Hasan, S N, Hasan, Priya, Nbody simulations of Clusters and Galactic Dynamics, New Advances in Physics, Vol. 9, No. 1, March 2015, pp. 7-13, **ISSN** : 0974-3553
- S N Hasan, Priya Shah and P Nagamani, Dwarf Galaxies in the Core of Coma Cluster, To be published in IAU 344 Proceedings, Dwarf Galaxies: From the Deep Universe to the Present, IAU, GA, Vienna, 2018, arXiv:1810.00245
- Hasan, S., Shah, P., & Nagamani, P. (2018). Dwarf Galaxies in the Core of ComaCluster.c.14(S344), 417419. doi:10.1017/S1743921318006750
- S N Hasan, Priya Shah and P Nagamani, Dwarf Galaxies in the Core of Coma Cluster, Dwarf Galaxies: From the Deep Universe to the Present Proceedings IAU Symposium No. 344, 2019 K. B. W. McQuinn & S. Stierwalt, eds. c International Astronomical Union 2019

doi:10.1017/S1743921318006750, arXiv:1810.00245

- Swetha Thakkalappally, Priya Hasan and S. N Hasan, Effect of the gas percentage on the thickness of the galactic discs during minor mergers using hydrodynamical simulations Galactic Dynamics in the Era of Large Surveys, Proceedings IAU Symposium No. 353, 2019, M. Valluri, & J. A. Sellwood, 2019 International Astronomical Union
- Syed Najamul Hasan, Priya Hasan, MANUU, Hyderabad Mass Segregation in the Gaia era, 38th Annual Meeting of the Astronomical Society of India (ASI), IISER Thirupathi, Abstract id: ASI2020_553
- NagamaniPoloji, Priya Hasan, S N Hasan, ASI2020_312, Disk evolution of classical and pseudobulges in S0 galaxies in core of Coma Cluster
- Hasan P., Hasan S.N. (2020) The System of Open Star Clusters Revisited. In: Saha S., Nagaraj N., Tripathi S. (eds) Modeling, Machine Learning and Astronomy. MMLA 2019. Communications in Computer and Information Science, vol 1290. Springer, Singapore. https://doi.org/10.1007/978-981-33-6463-9_11
- M.Mahmudunnobe, P.Hasan, M.Raja, S.N.Hasan, “Membership of Stars in Open Clusters using Random Forest with Gaia Data”, European Physical Journal Special Topics. doi:10.1140/epjs/s11734-021-00205-x arXiv:2103.05826 [astro-ph.SR]
- Priya Hasan & S N Hasan, Astronomy Data, Virtual Observatory and Education, Education and Heritage in the era of Big Data in Astronomy, International Astronomical Union, Proceedings IAU Symposium No. 367, 2021, R.M. Ros, B. Garcia, S. Gullberg, J. Moldon & P. Rojo, eds. (accepted) arXiv:2104.10088 [physics.ed-ph]
- Priya Hasan & S N Hasan, Astronomy Education in Covid Times Education and Heritage in the era of Big Data in Astronomy, International Astronomical Union, Proceedings IAU Symposium No. 367, 2021, R.M. Ros, B. Garcia, S. Gullberg, J. Moldon & P. Rojo, eds. (accepted) [arXiv:2104.06305](https://arxiv.org/abs/2104.06305) [physics.ed-ph]

Complete refereed articles in proceedings (since 2006)

1. Priya Hasan, & **Hasan, S N**, The dynamics of mass segregation in star clusters, Interstellar Matter and Star Formation: A Multi-wavelength Perspective, ASI Conference Series, 2010, Vol. 1, pp 229–231, Edited by D. K. Ojha .
2. **Hasan S N**, Geometric Algebra –An alternative approach to Celestial Mechanics, Celestial Mechanics: Recent Trends, Editor Bhola Ishwar, Narosa Publishers, 2006
3. Priya Hasan, & **Hasan S N**, Dynamical Evolution of a young stellar aggregate in the presence of a massive shell of gas using N-body simulations, 61, Proceedings of the 25 th meeting of the Astronomical Society of India, Special Issue, BASI, 2008.
4. Priya Hasan, **Hasan S N** & Shah, Urmi, Is mass segregation in star clusters primordial?, Proceedings of the 25th meeting of the Astronomical Society of India, Special Issue, BASI, 2008.
5. **Hasan S N**, Stability of planar libration points for the photogravitational restricted three body problem, Proceedings of the 25 th meeting of the Astronomical Society of India, Special Issue, BASI, 2008.
6. Priya Hasan, & **Hasan, S N**, Multivariate Analysis of Star Clusters, (poster at ASI-2009, submitted to BASI)
7. Priya Hasan, & **Hasan, S N**, Multicolor observations of the young clusters NGC 1931, NGC 189 and NGC 637 (poster at NSSS-2008, submitted to BASI, 2008)
8. **Hasan S N**, Priya Shah and P Nagamani, Dwarf Galaxies in the Core of Coma Cluster, To be published in IAU 344 Proceedings, Dwarf Galaxies: From the Deep Universe to the Present, IAU, GA,

Articles in Popular Journals

1. **Hasan, S N** .2002, The Three Body Problem, Proc. of AP Akademi of Sciences, 6, 149.
2. Alladin, S M & **Hasan S N**, Interactions and Mergers of Galaxies, Resonance, March 2007, Vol 12, No 3.

DETAILS OF
CONFERENCE/S
EMINAR
/WORKSHOP/
FDP
(ATTENDED/PRESENTED)

2019-2021				
Name of the Conference	Dates of the Conference	Participated as Paper Presenter (Title of the Paper)	Resource Person (Title of the Presentation)	Level (State/National/International)
International conference on Modeling Machine Learning and Astronomy PES, Bangalore	Nov 22, 23 2019	Statistical Techniques for Astronomy in the Era of Big Data	Invited speaker “Statistical Techniques for Astronomy in the Era of Big Data”	International
International Conference on Fundamentals of Physics 2019 Birla Science Centre Hyderabad	6-8 September 2019	The Beast called Milky Way: The formation and evolution of the Milky Way Galaxy	Invited Talk The Beast called Milky Way: The formation and evolution of the Milky Way Galaxy	International
National Urdu	25-26	“Khekkashaon		National

Science Congress MANUU, Hyderabad	February 2020	ki Duniya” The World of Galaxies		
ZOOM - Webinar Organised by Aurora Degree College	Jun 6, 2020	Cosmic Collisions	Invited Talk Cosmic Collisions	National
The Department of Mathematics, Osmania College(A), Kurnool, is organizing one day National Webinar on “Linear Algebra and its Applications”.	25/06/2020 (Thursday)	Linear Algebra and its Applications	Invited Talk Linear Algebra and its Application s	National
ZOOM - Webinar Organised by Aurora Degree College	6/6/ 2020	Cosmic Collisions	Invited Talk Cosmic Collisions	National
The Department of Mathematics, Osmania College(A), Kurnool, is organizing one day National Webinar on	25/06/2020	Linear Algebra and its Applications	Invited Talk Linear Algebra and its Application s	National

“Linear Algebra and its Applications”.				
UGC-HRDC, MANUU, Hyderabad	5th to 10th October 2020	Short term Course in “Research Methodology in Sciences ”	Convener	National
Faculty Induction Programme (Gurudakshita) MANUU,	12/12/2020.	Environmental Consciousness and Sustainable Development Goals	Resource Person Invited Talk	National
Faculty Induction Programme UGC-HRDC, MANUU, Hyderabad	27/1/ 2021 (2:00-3:30)	SDG for a future Society	Resource Person Invited Talk	National
Faculty Induction Programme UGC-HRDC, MANUU, Hyderabad	27/1/ 2021 (3:30-5:00)	SDG into their teaching & Research	Resource Person Invited Talk	National
Faculty Induction Programme UGC-HRDC, MANUU, Hyderabad	9 th February to 10 th March 2021	Group Discussions	Resource Person	National
Faculty Induction Programme	6/3/2021	Group Discussions	Resource Person	National

UGC-HRDC, MANUU, Hyderabad				
Astrosprint AOD workshop	26/3/2021	The N-body Problem and it's applications in Astronomy	Invited Talk	International
Astrosprint AOD workshop	28/3/2021	Hands-on session on The N-body Problem and it's applications in Astronomy	Resource Person	International

27 Jan – 2 Feb 2019 “Spiral Structure and Gaia” at the 49th Saas-Fee Advanced Course,
“The Milky Way in the Gaia Era”, Saas-Fee, Switzerland.

Jan 7 - 11, 2019 Invited talks in "Celestial Mechanics and Dynamical Astronomy (CMDA)" held at
the Department of Mathematics, Central University of Rajasthan.

Lecture-I: Our Solar System and its Dynamics

Lecture-II: Essentials of Celestial Mechanics: from 3-Body to N-Body Problem

Lecture-III: N-Body Problem & its Applications

November, 2018 Keynote address entitled: “Dynamical Systems in Space: N-body Simulations a
tool study” at Workshop on Dynamical Systems in Space, CBIT, Hyderabad.

April 2018 Keynote -2 lecture entitled "Understanding our Universe Through Emerging Science and
Technology" 13th Session J & K Science Congress, Kashmir University, Srinagar.

January 2018 Invited talk: “Exploring the Librational Points as locations for planet formation.” G P
Birla Physics and Astronomy Meet, Invited Talk, Birla Science Center, Hyderabad.

January 2017 “Space Astronomy”, Invited Talk at Symposium on Space Dynamics, 104 Indian
Science Congress entitled: “Applications of Geometric Algebra in Celestial Mechanics. Spinors: A
tool to track near Earth Objects”, Sri Venkateshwara University, Tirupati, India.

February 2017, Invited talk: “Our Place in the Universe” in the Winter School on Astronomy and
Workshop on Star Clusters, “Astronomy at the Deccan”, at Birla Science Center, Hyderabad, in
collaboration with the Department of Physics and Astronomy,
University of Western Ontario, Canada.

Feb, 2016, Invited talk entitled “Life in Outer Space” at the Winter School on Astronomy “Astronomy at the Taj”, Anand Engineering College Agra, in collaboration with the Department of Physics and Astronomy, University of Western Ontario, Canada.

Feb, 2016, Invited talk and Panel discussion “Mathematics Education for Urdu medium students”, Mathematics Education and Social Justice Concerns, Tata Institute of Social Sciences, Hyderabad

Feb 2016, Invited talk: N Body Simulations, Frontiers of Physics, Birla Science Centre, Hyderabad.

Dec 2015 International Conference on Celestial Mechanics and Dynamical Astronomy, held between

15th -17th December 2015 at MANUU, Talk entitled: The Three Body Problem and its Applications. (Convener)

May 2013, 2014, 2015 A series of lectures on Astronomy, covering observation techniques, celestial sphere, constellations, Stellar Structure, Galaxies, Cosmology. Resource person for Astronomy for Astronomy Olympiad Summer School. at the Homi Bhabha Centre for Science Education (HBCSE), TIFR, Mumbai

August 2013-to date Resource person for teacher training course on Astronomy at the Homi Bhabha Centre for Science Education (HBCSE), TIFR, Mumbai

May 2012 Geological Society of India, Bangalore Earth Sciences Camp, May 7-27, 2012. Goa University. A series of lectures on Astronomy, covering observation techniques, celestial sphere, constellations, Stellar Structure, Galaxies, Cosmology. Resource person for Astronomy for Earth Science Olympiad Summer School

May 2012 Department of Astronomy, Osmania University, Hyderabad, Workshop on Transit of Venus Invited talk: The Cosmic Dance of the Planets

June 2011 Mentors in the INSPIRE INTERNSHIP SUMMER CAMP from 6-10 June 2011, Pt Ravishankarshukla University, Raipur.

Invited talks: (1) Surfing Through Dimensions

(2) “Is anybody out there?” - Searching for life in outer space.

May 2011 Geological Society of India, Bangalore Earth Sciences Camp, May 5-24. and Hyderabad Central University. A series of lectures on Astronomy, covering observation techniques, celestial sphere, constellations, Stellar Structure, Galaxies, Cosmology and night sky observations. Resource person for Astronomy for Earth Science Olympiad Summer School.

Jan 2010 Frontiers of Interface Between Science and Statistics, International Conference, Central University of Hyderabad.

Invited talk: “Statistical Tool for Astrophysics”

DETAILS OF
KEYNOTE
SPEAKER/RESO
URCE PERSON/
SESSION CHAIR
ETC.

April 2018 Keynote -2 lecture entitled "Understanding our Universe Through Emerging Science and Technology" 13th Session J & K Science Congress, Kashmir University, Srinagar.

November, 2018 Keynote address entitled: "Dynamical Systems in Space: N-body Simulations a tool study" at Workshop on Dynamical Systems in Space, CBIT, Hyderabad

ACHIVEMENTS

- 1989-93 USSR Government Scholarship for Doctoral Studies awarded by Ministry of Human Resource, Development (MHRD), Government of India.
- 1984-85 University Merit Scholarship for securing first rank in the merit list of MSc (Mathematics)
- 1984-86 National Merit Scholarship for securing second rank in the merit list of Osmania University, Hyderabad, India.
- 1986-87 UGC University Merit Fellowship for M Phil.

DETAILS OF
SUPERVISION
(M.PHIL/M.TECH
/P.HD.)

Five PhDs awarded

PROFESSIONAL
MEMBERSHIPS

- Life Member of the Astronomical Society of India (ASI)
- Member Scientific Organizing Committee of the ASI. (2006-2008)
- Executive Council Member of ASI (2006- 2009).
- Member Scientific Organizing Committee for the International Earth Science Olympiad to be held in Mysore, September 2013.

PERSONAL
DETAILS

Father's Name : Syed Turabul Hasan
Date of Birth : 17 May 1963
Gender : Male
Marital Status : Married
Nationality : Indian
Language Known : English, Urdu, Hindi, Russian

Other

Information : He has travelled for academic purposes and delivered lectures in Russia, New Zealand, Europe, Egypt and Southeast Asia. He is passionately & actively involved in mathematics education, Olympiads, public outreach and science popularization programs for children and adults. He has been the Team Leader for the Indian Team at the International Astronomical Olympiad in 2016.

Date: 25-2-2022
Place: Hyderabad

(*Syed Najamul Hasan*)

[Last update on: 25th February 2022]