

Curriculum Vitae – Rupal Basak

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Academic Employment History

- Postoc** INAF - BOLOGNA, ITALY July 2019 – Present
Marie Skłodowska-Curie Astrofit 2 Fellowship.
Project title: ‘ GRB radiation: physical mechanisms, correlations and constraining cosmological parameters
- Postoc** KTH ROYAL INSTITUTE OF TECHNOLOGY June 2017 – May 2019
STOCKHOLM, SWEDEN
Research on gamma-ray burst detected by Fermi.
Received **two travel grants** from
Royal Swedish Academy of Sciences (2018)
- Postoc** N. COPERNICUS ASTRONOMICAL CENTER (NCAC) Oct 2014 – May 2017
WARSAW, POLAND
Research on accretion disc of black hole X-ray binaries.
Awarded prestigious **START** fellowship (2016–17) from
Foundation for Polish Science,
Two **young researcher grants** at NCAC (2015–17)
and co-I in a grant with Prof. Zdziarski as PI (2015)

Academic Qualification

- Ph.D.** TATA INSTITUTE OF FUNDAMENTAL RESEARCH (TIFR) 2009 – Sep 2014
MUMBAI, INDIA
Thesis: *Spectral and Timing Analysis of the Prompt Emission of Gamma Ray Bursts*
Justice Oak Outstanding Thesis,
awarded by Astronomical Society of India
- Master of Science** INDIAN INSTITUTE OF TECHNOLOGY (IIT), KANPUR 2007 – 2009
Topper in two out of four semesters
Institute merit scholarship for academic excellence
- Bachelor of Science** UNIVERSITY OF CALCUTTA 2004 – 2007
Topper of the college
Ramgopal-Bimala Agarwala Medal

Research Grants

1. **Marie Skłodowska-Curie Astrofit 2 Fellowship (2019):** 45,000 Euro per year (fellowship), funded by European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement n. 664931.
2. **PI in KVA travel grant (2018):** 35,000 SEK, awarded by Royal Swedish Academy of Sciences (KVA) Astronomy and Space Sciences 2018; project, ‘Radiation process and geometry of GRB jets: a spectro-polarimetric and multi-wavelength perspective’.
3. **PI in KVA travel grant (2018):** 25,000 SEK, awarded by Royal Swedish Academy of Sciences (KVA) Physics; project, ‘Radiation process and geometry of GRB jets: a spectro-polarimetric and multi-wavelength perspective’ collaboration with Prof. Nat Butler, Arizona State University, USA.
4. **PI in FNP ‘START’ grant (2016–17):** 46,000 Polish zloty (fellowship & travel grant), awarded by Foundation for Polish Science (FNP). Competition: Young researchers among all academic disciplines in Poland (success rate 9.37%).
5. **PI in Young researcher grant (2016–17):** 7,200 Polish zloty for individual project titled ‘Study of X-ray Binary and Gamma-ray Burst with Astrosat’ at NCAC, Warsaw (2016).
6. **PI in Young researcher grant (2015–16):** 4,000 Polish zloty for individual project titled ‘Radiation process in a spine-sheath jet of gamma-ray burst’ at NCAC, Warsaw (2015).
7. **Co-I:** Total 2.5 million Polish zloty. My contract: 1000 zloty per month plus travel grant. Project: Inflows and outflows around black holes and neutron stars, awarded by National Science Centre, Poland. PI: A. Zdziarski (2015).

Awards and Distinctions

1. **Justice Oak outstanding thesis:** awarded by Astronomical Society of India (2016). Competition based on nomination of young Indian Astronomers who defended their thesis one year prior to the call.
2. **NCAC fellowship:** independent postdoctoral fellowship at NCAC (2014–2017).
3. **NET JRF:** Junior Research Fellowship in National Eligibility Test (2010).
4. **Graduate fellowship:** at Tata Institute of Fundamental Research (2009–14).
5. **VSP fellowship:** Visiting Student Program at Harish Chandra Research Institute (2008).
6. **Institute merit scholarship:** for academic excellence during Master’s study at IIT Kanpur (2007–09).
7. **JBNSTS:** Jagadish Bose National Science Talent Search fellowship in recognition as a creative undergraduate student of basic science, among all students of science disciplines of the state (2004–2007).
8. **NGPE 2007:** National top 1% in National Graduate Physics Examination (2007).
9. **Ramgopal-Bimala Agarwala Medal:** Topper in the B. Sc. final exam under Calcutta University in the Physics department of the college (2007).

10. **Saruju Bala prize:** Highest marks in all the college exams taken together during 2004–2007 in Physics (honours) among the students of the college (2007)
11. **NIUS:** Selected for National Initiative on Undergraduate Science at HBCSE (2005).

Major Scientific Collaborations

1. **Fermi LAT collaboration:** Member of the Fermi Large Area Telescope collaboration since Sep, 2017. I am taking part as a burst advocate.
2. **Astrosat:** Associated with the CZTI group of Indian satellite, Astrosat. Major contribution in spectro-polarimetric study of GRBs. Several papers published and in preparation.
3. **THESEUS:** ESA M5 selected mission (2018). I joined as a contributory scientist, invited by the PI, Prof. Lorenzo Amati (INAF, Bologna) in 2016. Contributed in a collaboration paper, 1 conference paper, SOC in Theseus workshop in Napoli, Italy, 5–6 Oct, 2017.
4. **MAXI and Integral:** Collaborating with the members of these missions to study the state transitions of XRBs as observed by these satellites. Projects underway.

Research Visits

1. **Arizona State University, USA:** September 1 – 14, 2018, sponsored by my own grant from Royal Swedish Academy of Sciences. Collaboration with Prof. Nat Butler on optical afterglow of GRB, and follow-up of gravitational wave events.
2. **Stanford University, USA:** August 1 – September 1, 2018, sponsored by European Commission’s Horizon 2020 project – NEW WindowS (NEWS). Collaboration with Dr. Giacomo Vianello of Fermi satellite team for the follow-up of gravitational wave events in high energies.
3. **Radboud University, Nijmegen, The Netherlands** September 14 – October 3, 2017, sponsored by KTH. Collaboration on gravitational wave counterparts.
4. **ISDC, Switzerland:** April 27 – May 29, 2017, sponsored by a grant from National Science Centre, Poland (PI: Prof. Andrzej Zdziarski). Collaboration on X-ray binary. One paper to be submitted soon, and another in preparation.
5. **Institute of Physical and Chemical research (RIKEN), Tokyo, Japan:** February 08 – March 03, 2017, sponsored by my own START grant. Works related to state transition in black hole binary with MAXI. Main collaborator: Prof. Kazuo Makishima, head of the MAXI team. One paper in preparation.
6. **ISDC, Switzerland:** May 27 – July 29, 2016, sponsored by a grant from National Science Centre, Poland (PI: Prof. Zdziarski). Works related to *Integral*, one paper in preparation.
7. **Yukawa Institute for Theoretical Physics (YITP), Kyoto, Japan:** October 28 – November 15, 2013, sponsored by TIFR. YIPQS long-term international workshop ‘*Supernovae and Gamma-Ray Bursts*’. Oral and poster presentation.

Teaching experience

1. 2019, April–May, **Teacher** in SH 2402: ‘Astrophysics’, 6.0 credits (second cycle) at KTH.

2. 2019, April–May, **Tutor** in the course SH 2402: ‘Astrophysics’ (second cycle) at KTH.
3. 2019, April–May, **Teaching Assistant** in SH 1003: ‘Introductory Astronomy for Engineers’, 7.5 credits (first cycle) at KTH.
4. 2018, April–May, **Teacher** in SH 2402: ‘Astrophysics’, 6.0 credits (second cycle) at KTH.
5. 2018, April–May, **Tutor** in the course SH 2402: ‘Astrophysics’ (second cycle) at KTH.
6. 2018, April–May, **Teaching Assistant** in SH 1003: ‘Introductory Astronomy for Engineers’, 7.5 credits (first cycle) at KTH.

Experience in supervision

1. Reviewer of the Master of Science thesis of Nacer Naciri, namely “*Validation of on-board algorithms for SVOM satellite payload management*” submitted to Centre National d’Etudes Spatiales (CNES), Toulouse, France and KTH Royal Institute of Technology, Stockholm, Sweden. Presented at KTH on March 22, 2018.
2. Co-supervision of a PhD student, Vikas Chand (2013 – 2019, supervisor: Prof. A. R. Rao) at Tata Institute of Fundamental Research (TIFR), Mumbai, India. Research: spectral and polarimetric study of gamma-ray burst (GRB), correlation in GRBs. Supervised in **learning the analysis tools**, development of **writing skills**, and collaboration in several **refereed publication, 2 published papers, 2 submitted** and several in preparation.
3. Guidance to PhD students from various research institutes in India for laboratory testing of CZT Imager of the Astrosat satellite in the ‘qualification phase’ during 2013 – 2014.
4. Mentored a Master’s student (now a PhD student at TIFR) under Visiting Students’ Research Programme (VSRP) at TIFR in testing of the CZTI instrument of ASTROSAT (May – July, 2013). I helped in developing a ‘table model’ based on the Astronomy software Xspec that was used to fit the line profile detected by the CZTI.
5. Co-supervised undergraduate students (Bachelor of Science/Technology) under the National Initiative on Undergraduate Science (NIUS) program. Topic: analysis of bright GRBs detected by the *Fermi* satellite (2012 – 2013). Published in a **peer-reviewed journal**.
6. Guided a junior research fellow at TIFR on various experiments and analysis of the ‘qualification model’ of Charge Particle Monitor (CPM) instrument of the Astrosat satellite (2011–12). He is now appointed as a scientist-‘B’ at an institute of Ministry of Communication and Information Technology, government of India.

Oral and Poster Presentation, and others

1. **Invited seminar**, “*Deciphering the radiation process and jet geometry of gamma-ray bursts*” at Centre of Astronomy, IIT Indore, Nov 22, 2018.
2. **Invited talk**, “*Multi-wavelength and multi-messenger view of gamma-ray bursts*” in ‘*Exploring the Universe: Near Earth Space Science to Extra-Galactic Astronomy*’, Kolkata, India, Nov 16, 2018.
3. **Invited seminar**, “*Radiation process and jet geometry of gamma-ray bursts*” in Cosmology

Seminars at Arizona State University, USA, Sept 7, 2018

4. **Invited talk**, “*Joint spectro-polarimetric studies of GRB prompt emission*” in ‘*Fifteenth Marcel Grossmann Meeting*’, Rome, July 2, 2018.
5. **Invited talk**, “*Geometry of accretion disc in the hard state of X-ray binary*” in *stellar evolution meeting*, Radboud University, Nijmegen, The Netherlands, Sep 20, 2017.
6. **Invited talk**, “*Multi-wavelength study of GRB spectral evolution*” in ‘*Gamma-ray Bursts : Prompt to Afterglow*’, NCRA, Pune, India, July 04, 2017.
7. **Invited talk**, “*GRB 151006A: In the context of Radiation mechanism in GRBs*” in ‘*Wide Band Spectral and Timing Studies of Cosmic X-ray Sources*’, TIFR, India, Jan 13, 2017.
8. **Invited talk**, “*Spectroscopy of GRBs: clues for the radiation mechanism and jet geometry*” in ‘*Jet Triggering Mechanisms in Black Hole Sources*’, TIFR, India, Jan 20 – 23, 2016.
9. **Invited talk**, “*Pulse-wise GRB correlation: implication as a cosmological tool*” in ‘*Fourteenth Marcel Grossmann Meeting*’, Rome, July 12 – 18, 2015.
10. **Invited talk**, “*The signature of the photosphere in the pulses of GRBs*” in ‘*Hard X-ray Astronomy: Astrosat and Beyond*’, Goa, India, Sep 24 – 26, 2014.
11. **Invited seminar**, titled “*Prompt Emission of GRBs*” at *IISc Astrophysics seminar series*, Indian Institute of Science (IISc), Bangalore, India, Apr 2, 2013.
12. **Invited talk**, “*Temporal and spectral study of Fermi GRBs using different models and their interpretations*” in ‘*X-ray View of Cosmos*’, PRL, India, Apr 23 – 25, 2012.
13. **Talk** titled “*Spectral, timing and polarization study of GRB prompt emission: a multi-instrument perspective*” in the Theseus Workshop, Napoli, Italy, 6 Oct, 2017.
14. **Talk** titled “*Disc truncation in the hard state of GX 339-4 and Cygnus X-1*” in the conference, The power of X-ray spectroscopy, Warsaw, September 6, 2017.
15. **Talk** titled “*Spectral study of the hard state of GX 339-4 and Cygnus X-1*” in the 35th Meeting of the Astronomical Society of India (ASI), Jaipur, India, March 6–10, 2017.
16. **Talk** titled “*The prompt emission of gamma-ray bursts: signature of the thermal component*” in 33rd Meeting of the Astronomical Society of India (ASI), Pune, India, February 17 – 20, 2015.
17. **Talk** titled “*Revisiting Photospheric Model of GRB Prompt Emission*” and two posters titled “*Study of the Prompt Emission of GRBs With and Without Supernova*” and “*Time Resolved Spectral Analysis of Bright Fermi/LAT Detected GRBs*” in **YIPQS long-term international workshop** ‘*Supernovae and Gamma-Ray Bursts*’, YITP, Kyoto, Japan, 28 Oct – 15 Nov, 2013.
18. **Talk** titled “*Spectral Evolution in GRB Pulses*” in the international ‘*Young Astrophysicists Symposium*’, Mumbai, Dec 19 – 21, 2012.
19. **Talk** in ‘*Winter School on Astronomical and Cosmological Surveys*’, Mumbai, Dec 10 – 17, 2012.
20. **Talk** titled “*A New Pulse-wise Correlation of GRB Prompt Emission: A Possible Cosmo-*

- logical Probe*” in ‘39th COSPAR Scientific Assembly’, Mysore, India, June 14 – 22, 2012.
21. **Talk** titled “*Pulse Spectral Evolution of GRBs: Implication as Standard Candle*” in the international ‘*Fermi / Swift GRB Conference 2012*’, Munich, Germany, May 7 – 11, 2012.
 22. **Talk** titled “*Temperature evolution of GRB pulses: reviewing Band model*” in the international workshop ‘*Advanced Workshop on X-ray Timing*’, IUCAA, January 23 – 28, 2012.
 23. Group project in ‘*Cloudy workshop*’, Warsaw, May 4 – 8, 2015. **Published a paper in A&A**
 24. Poster titled “*Thermal emission from the photosphere of GRB jet*” in the 9th Harvard-Smithsonian Conference on Theoretical Astrophysics titled ‘*The Transient Sky*’, USA, May 16 – 19, 2016.
 25. Poster titled “*Spectral analysis of the XMM-Newton data of GX 339-4 in the low/hard state during the outburst of 2013: Disk truncation radius and other issues*” in the international conference ‘*The Extremes of Black Hole Accretion*’, ESAC, Madrid, Spain, June 8 – 10, 2015.
 26. Poster “*Nature of thermal emission from the photosphere of GRB jet*” in ‘*Relativistic Jets: Creation, Dynamics, and Internal Physics*’, Krakow, Poland, April 20 – 24, 2015.
 27. Poster titled “*GRB as luminosity indicator*” in the international IAU Symposium 296: ‘*Supernova environmental impacts*’, Raichak, India, Jan 7 – 11, 2013.
 28. Participated in Nordita extreme-gravity stars workshop, Stockholm, June 5 – 30, 2017.
 29. Attended *International Conference on Gravitation and Cosmology*, Goa, Dec 14 – 19, 2011.

Science Popularization Activities

1. **Highlighted research by scientific outreach (2015):** Article for scientific outreach at NCAC, Warsaw, Poland based on our paper ‘Thermal Emissions Spanning the Prompt and the Afterglow Phases of the Ultra-long GRB 130925A’ by Basak & Rao (2015, ApJ). This was a highlighted research in the NCAC website, July 2015.
2. **Journal Club and other interaction (2012–present):** Lectures during PhD (twice), during postdoc at NCAC (twice), and presentation in the Astro-group meeting at KTH.
3. **Frontiers of Science events (2012–14)** Volunteered three times for the Frontiers of Science (FoS) events at TIFR. FoS is an yearly event when school students from various schools come to visit TIFR for a full day. I volunteered as an escort in two occasions, and acted as a laboratory volunteer once.

Other community services

1. Acted as a referee in the *Astrophysical journal*.
2. Acted as a reviewer of the proposal submitted to the Time Allocation Committee (TAC) of

Himalayan Chandra Telescope (HCT).

3. **Member of the scientific organizing committee (SOC)** of the international workshop, ‘THESEUS workshop 2017’, Napoli, Italy on 5 –6 October, 2017. Main organizers: Prof. Lorenzo Amati, Dr. Enrico Bozzo, Prof. Massimo Della Valle.
4. Worked in the local organizing team in IAU Symposium 296: ‘Supernova environmental impacts’, Raichak, India, Jan 7 – 11, 2013, main organizer: Prof. A. Ray, TIFR.

List of Publications – Rupal Basak

A. Publications in Refereed Journal

2018

1. “*Violation of synchrotron line of death by the highly polarized GRB 160802A*”,
Chand, V., Chattopadhyay, T., Iyyani, S. **R. Basak**), Aarthy, E., Rao, A. R.,
Vadawale, S. V., Bhattacharya, D., Bhalerao, V. B.
2018, **The Astrophysical Journal**,
Volume 862, Issue 2, article id. 154, 11 pp.
Note: Contribution in writing various parts of the paper and internal referring.
2. “*The THESEUS space mission concept: science case, design and expected performances*”,
Amati, L., O’Brien, P., Goetz, D., Bozzo, E., et al. (including **R. Basak**),
2018, **Advances in Space Research**,
Volume 62, Issue 1, p. 191-244
Note: THESEUS is one of the accepted missions for the ESA M5.
Contribution in writing a part on GRB spectral study and GRB correlation.

2017

1. “*Analysis of NuSTAR and Suzaku observations of Cyg X-1 in the hard state: evidence for a truncated disc geometry*”,
R. Basak, Andrzej A. Zdziarski, Michael Parker, Nazma Islam,
2017, **Monthly Notices of the Royal Astronomical Society**.
Volume 472, Issue 4, p.4220-4232
Note: Lead role in the analysis.

2. “*Surprise in simplicity: an unusual spectral evolution of a single pulse GRB 151006A*”,
R. Basak, S. Iyyani, V. Chand, T. Chattopadhyay, D. Bhattacharya, A. R. Rao,
S. V. Vadawale
2017, **Monthly Notices of the Royal Astronomical Society**,
Volume 472, Issue 1, p.891-903
Note: Lead role. Includes the PhD student.

3. “*Charged Particle Monitor on AstroSat mission*”,
A. R. Rao, et al. (18 authors including **R. Basak**, author list according to policy),
2017, **Journal of Astrophysics and Astronomy**,
Volume 38, Issue 2, article id. 33, 6 pp.
Note: Lead role in laboratory testing and developing the IDL code for analysis.

4. “*SALT long-slit spectroscopy of HE 0435-4312: fast change in the Mg II emission line shape*”,
Sredzinska, J., Czerny, B., Hryniewicz, K., Krupa, M., Marziani, P., Adhikari, T. P.,
R. Basak, You, B., Wang, J.-M., Hu, C., Pych, W., Bilicki, M.,
2017, **Astronomy & Astrophysics**,
Volume 601, id.A32, 15 pp.
Note: Performed cloudy simulation to find equivalent width of Mg II line in the
broad line region of a quasar. Compared with the observation and expected
covering fraction to infer turbulence in the broad line region.

5. “*Prompt emission polarimetry of gamma ray bursts with Astrosat CZT-Imager*”
T. Chattopadhyay, S. V. Vadawale, E. Aarthy, N. P. S. Mithun, V. Chand, **R. Basak**,
A. R. Rao, S. Mate, V. Sharma, V. Bhalerao, D. Bhattacharya
2017, submitted in **The Astrophysical Journal**. arXiv:1707.06595

2016

1. “*Spectral analysis of the XMM-Newton data of GX 339-4 in the low/hard state: disc truncation and reflection*”,
R. Basak & A. A. Zdziarski,
2016, **Monthly Notices of the Royal Astronomical Society**,
Volume 458, Issue 2, p.2199-2214.
Note: Developed the main ideas, lead role in analysis and writing.

2. “*AstroSat CZT Imager observations of GRB 151006A: Timing, Spectroscopy and Polarization study*”,
A. R. Rao, et al. (27 authors including **R. Basak**, author list according to policy),
2016, **The Astrophysical Journal**,
Volume 833, Issue 1, article id. 86, 10 pp.
Note: Spectral analysis. The second author is a PhD student whom I am co-mentoring.

3. “*The high-energy gamma-ray detection of G73.9+0.9, a supernova remnant interacting with*

a molecular cloud”,

A. A. Zdziarski et al. (9 authors including **R. Basak** as the 9th),
2016, **Monthly Notices of the Royal Astronomical Society**,
Volume 455, Issue 2, p.1451-1458.

Note: Contributed in measuring the X-ray emission and took part in calculating the distance of the source (~ 4 kiloparsec).

2015

1. “*Discovery of Smoothly Evolving Blackbodies in the Early Afterglow of GRB 090618 : Evidence for a Spine-Sheath Jet?*”,

R. Basak & A. R. Rao,

2015, **The Astrophysical Journal**, Volume 812, Issue 2, article id. 156, 11 pp.

Note: Lead role in idea, analysis and writing.

2. “*Thermal Emissions Spanning the Prompt and the Afterglow Phases of the Ultra-long GRB 130925A*”,

R. Basak & A. R. Rao,

2015, **The Astrophysical Journal**, Volume 807, Issue 1, article id. 34, 6 pp.

Note: Lead role in idea, analysis and writing.

2014

1. “*Time-resolved spectral study of Fermi gamma-ray bursts having single pulses*”,

R. Basak & A. R. Rao,

2014, **Monthly Notices of the Royal Astronomical Society**,
Volume 442, Issue 1, p.419-427.

Note: Lead role in idea, analysis and writing.

2. “*Time-resolved spectral analysis of prompt emission from long gamma-ray bursts with GeV emission*”,

A. R. Rao, **R. Basak**, J. Bhattacharya, S. Chandra, N. Maheshwari et al.,

2014, **Research in Astronomy and Astrophysics**

Volume 14, Issue 1, article id. 35-46

Note: Lead role in analysis, mentored the students (author 3–5) for the project.

2013

1. “*Pulse-wise Amati correlation in Fermi gamma-ray bursts*”,

R. Basak & A. R. Rao,

2013, **Monthly Notices of the Royal Astronomical Society**,
Volume 436, Issue 4, p.3082-3088.

Note: Lead role in idea, analysis and writing.

2. “*A Lingering Non-thermal Component in the Gamma-Ray Burst Prompt Emission: Predicting GeV Emission from the MeV Spectrum*”,

R. Basak & A. R. Rao,
2013 **The Astrophysical Journal**,
Volume 775, Issue 1, article id. 31, 5 pp.
Note: Lead role in idea, analysis and writing.

3. “*A New Method of Pulse-wise Spectral Analysis of Gamma-Ray Bursts*”,

R. Basak & A. R. Rao,
2013, **The Astrophysical Journal**,
Volume 768, Issue 2, article id. 187, 15 pp.
Note: Lead role in idea, analysis and writing.

2012

1. “*Correlation between the Isotropic Energy and the Peak Energy at Zero Fluence for the Individual Pulses of Gamma-Ray Bursts: Toward a Universal Physical Correlation for the Prompt Emission*”,

R. Basak & A. R. Rao,
2012, **The Astrophysical Journal**,
Volume 749, Issue 2, article id. 132, 5 pp.
Note: Lead role in idea, analysis and writing.

2. “*Measuring the Pulse of GRB 090618: A Simultaneous Spectral and Timing Analysis of the Prompt Emission*”,

R. Basak & A. R. Rao,
2012 **The Astrophysical Journal**,
Volume 745, Issue 1, article id. 76, 12 pp.
Note: Developed many important ideas, lead role in analysis and writing.

B. Conference proceedings and other academic publications

1. “*Role of THESEUS in Understanding the Radiation Mechanism of GRB Prompt Emission*”,

R. Basak,
2018, Memorie della Societa Astronomica Italiana, v.89, p.283

2. “*VizieR Online Data Catalog: 10 SALT spectra of HE 0435-4312*”,

Sredzinska, J., Czerny, B., Hryniewicz, K., Krupa, M., Marziani, P., Adhikari, T. P.,
R. Basak, You, B., Wang, J.-M., Hu, C., Pych, W., Bilicki, M.,
2017, VizieR On-line Data Catalog: J/A+A/601/A32
Note: The catalog of the source HE 0435-4312

3. *“Pulse-wise GRB correlation: implication as a cosmological tool”*,
R. Basak & A. R. Rao,
2016, **Proceedings of the Fourteenth Marcel Grossmann Meeting**
pp. 2907-2912.
DOI: https://doi.org/10.1142/9789813226609_0364.
Editors: Massimo Bianchi, Robert T Jantzen, Remo Ruffini
4. *“Spectral analysis of the XMM-Newton data of GX 339-4 in the low/hard state during the outburst of 2013: Disk truncation radius and other issues”*,
R. Basak,
2015, **Proceedings of The Extremes of Black Hole Accretion**.
Link: <https://www.cosmos.esa.int/web/xmm-newton/2015-workshop/>, ID: 71
5. *“GRB as luminosity indicator”*,
R. Basak & A. R. Rao,
2014, **Proceedings of the International Astronomical Union**,
Volume 9, Issue 296, page 356–357.
6. *“A new pulse-wise correlation of GRB prompt emission: a possible cosmological probe”*,
R. Basak & A. R. Rao
2012, abstract in **39th COSPAR Scientific Assembly**, B0.6-11-12, p.106.
7. *“Pulse spectral evolution of GRBs: implication as standard candle”*,
R. Basak & A. R. Rao,
2012, **Proceedings of the Gamma-Ray Bursts 2012 Conference**,
in Proceedings of Science (PoS), confid. 152, id.81.
Link: <https://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=152>