

Dr. Sourav Tarafder



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Head of the Department
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Education

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| 2017 | Doctor of Philosophy in Pure Mathematics, University of Calcutta.
Title: <i>Non-Classical Set Theories and Logics Associated with them.</i> |
| 2008 | Master of Science, Department of Pure Mathematics, University of Calcutta. |
| 2006 | Bachelor of Science in Mathematics Honours, Asutosh College, University of Calcutta. |

Publications

Refereed Papers in Journals

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| 2024 | • Santiago Jockwich Martinez, Sourav Tarafder, & Giorgio Venturi, <i>ZF and its interpretations</i> . Annals of Pure and Applied Logic , 175(6) : 103427. |
| 2023 | • Sourav Tarafder & Giorgio Venturi, <i>Independence proofs in non-classical set theories</i> . The Review of Symbolic Logic , 16(4) , pp. 979 – 1010. |
| 2022 | • Sourav Tarafder, <i>Non-classical foundations of set theory</i> . The Journal of Symbolic Logic . 87(1) , pp. 347 – 376. |

- Sourav **Tarafder** & Giorgio **Venturi**, *ZF between classicality and non-classicality*. **Studia Logica**. **110**, pp. 189 – 218.
- Santiago **Jockwich Martinez**, Sourav **Tarafder**, & Giorgio **Venturi**, *Ideal objects for set theory*. **Journal of Philosophical Logic**. **51**, pp. 583 – 602.
- 2021 • Benedikt **Löwe**, Robert **Paßmann**, & Sourav **Tarafder**, *Constructing illoyal algebra-valued models of set theory*. **Algebra Universalis**, **82**, 46.
- 2015 • Benedikt **Löwe** & Sourav **Tarafder**, *Generalized algebra-valued models of set theory*. **The Review of Symbolic Logic**, **8(1)**, pp. 192 – 205.

Refereed Papers in Conference Proceedings

- 2016 • Sourav **Tarafder** & Mihir Kr. **Chakraborty**, *A paraconsistent logic obtained from an algebra-valued model of set theory*. Beziau, J. Y., Chakraborty, M. K. and Dutta, S., editors, **New Directions in Paraconsistent Logic**, 5th WCP, Kolkata, India, February 2014, **Springer Proceedings in Mathematics & Statistics**, Vol. **152**. New Delhi: Springer, pp. 165 – 183.
- 2015 • Sourav **Tarafder**, *Ordinals in an algebra-valued model of a paraconsistent set theory*. In Banerjee, M. and Krishna, S., editors. **Logic and Its Applications**, 6th International Conference, ICLA 2015, Mumbai, India, January 8 – 10, 2015, **Lecture Notes in Computer Science**, Vol. **8923**. Berlin: Springer-Verlag, pp. 195 – 206.

Submitted for Publication

- Sourav **Tarafder**, *Basic Mathematics Beyond Classicality*.
- Santiago **Jockwich Martinez**, Sourav **Tarafder**, & Giorgio **Venturi**, *Quotient models for a class of non-classical set theories*.

Book Chapter

- 2020 Soma **Dutta** & Sourav **Tarafder**, *Consequence-inconsistency interderivability in paraconsistent logics and paraconsistent set theory*. In: Sarukkai S., Chakraborty M. (eds) **Handbook of Logical Thought in India**, Springer, New Delhi.

Others

- 2019 • Sourav **Tarafder**. Abstract of the PhD thesis: *Non-classical set theories and logics associated with them*. **The Bulletin of Symbolic Logic**, **25(4)**, p. 451.
- Sourav **Tarafder**. Abstract of the contributed talk: *Foundation of mathematics in a class of paraconsistent set theories* (presented in the 2019 European Summer Meeting of the Association for Symbolic Logic: Logic Colloquium 2019, Prague, Czech Republic), **The Bulletin of Symbolic Logic**, **25(4)**, p. 526.

Research Project

Ongoing

2023 – 2024	Project Title: Non-Classical Set Theories, Name of the Grant: Intramural Research Grant (Seed Money), Sanction Number: IMSXC2023-24/008, Funding Agency: St. Xavier's College, Kolkata
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Research Visits

2023	<i>Department of Philosophy, Classics, History of Art and Ideas (IFIKK)</i> , University of Oslo, Norway, 8 November, 2023 – 17 November, 2023.
2019 – 2020	<i>Institute of Philosophy and Human Sciences</i> , University of Campinas, Brazil, 16 October, 2019 – 15 October, 2020.
2018	<i>The Institute of Mathematical Sciences</i> , Chennai, India, 2 June – 16 June, 2018.
2017	<i>The Institute of Mathematical Sciences</i> , Chennai, India, 19 June – 31 June, 2017.
2016	<i>The Institute of Mathematical Sciences</i> , Chennai, India, 23 October – 1 November, 2016.
2015	<i>The Institute of Mathematical Sciences, Chennai</i> , India, 10 June – 23 June, 2015.
2014	<i>University of Amsterdam</i> , Amsterdam, The Netherlands, 1 June – 10 June, 2014.
2013	<i>University of Hamburg</i> , Hamburg, Germany, 1 June – 30 June, 2013.
2012	<i>Isaac Newton Institute for Mathematical Sciences, Cambridge University</i> , Cambridge, England, 21 April – 27 May, 2012.
2010 – 2011	<i>Institute for Logic, Language and Computation, University of Amsterdam</i> , Amsterdam, The Netherlands, 1 September, 2010 – 31 August, 2011.

Fellowships and Grants Awarded

Research Grants

2019	Pesquisador visitante grant, FAPESP, Brazil; visiting researcher at the Institute of Philosophy and Human Sciences, University of Campinas, São Paulo, Brazil; 16 October, 2019 - 15 October, 2020.
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- 2012 Visiting Fellowship; Isaac Newton Institute for Mathematical Sciences, Cambridge University; 21 April, 2012 – 27 May, 2012.
- 2010 Erasmus Mundus External Cooperation Window (EMECW 13) fellowship; visiting Ph.D. student at the Institute for Logic, Language and Computation, University of Amsterdam; 1 September, 2010 – 31 August, 2011.
- 2009 Council for Scientific and Industrial Research, National Eligibility Test (CSIR – NET) fellowship; Doctoral student; Department of Pure Mathematics, University of Calcutta; 15 October, 2009 – 14 October, 2014.

Travel Grants

- 2023 Travel and accommodation grant are linked to *Marie Skłodowska-Curie Postdoctoral Fellowship (UCAN, Grant agreement No. 101110740)* financed by the *European Union* for a short term research visit to the University of Oslo, Norway, 8 November, 2023 – 17 November, 2023.
- 2019 Travel grant from the *University Grant Commission (UGC)*, India, to present a contributed talk in the 16th CLMPST, Prague, Czech Republic, 5 – 10 August, 2019.
- 2014 Travel grant from the *Indo-European Research Training Network in Logic (IERT-NiL)* for a short term research visit to the Institute for Logic, Language and Computation, University of Amsterdam, Amsterdam, The Netherlands.
- 2013 Travel grant from the *National Board for Higher Mathematics (NBHM)*, India, for a short term research visit to the University of Hamburg, Hamburg, Germany and the Institute for Logic, Language and Computation, University of Amsterdam, Amsterdam, The Netherlands.
- 2012 Travel grant from the *University of Calcutta*, India, for a short term research visit to the Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.

Invited Talks and Paper Presentations

- 2024
- *Algebra-Valued Models 1: Non-Classical Foundation*, Kickoff Workshop of a New Generation Project, organized by the Institute of Philosophy and Human Sciences (IFCH), University of Campinas, São Paulo, Brazil, August 1 – 2, 2024.
 - “ = ” and “ ∈ ” in logic and set theory, International Seminar on Relevance of Predicate Logic and Mathematical Logic in Today’s Life, organized by the Department of Philosophy, Sonarpur Mahavidyalaya, Kolkata, India, July 19, 2024.
 - *Is classicality mandatory to develop basic mathematics?* National Seminar on Algebra, Analysis, Discrete Mathematics and their Application, organised by Sri Chaitanya College, Habra, Ashok Nagar, India April 3, 2024.

- *Cardinality in a parallel universe and a question*, World Logic Day Celebration by ALI 2024, organized by the Association for Logic in India and supported by Madras School of Economics and The Institute of Mathematical Sciences, Chennai, India, January 20, 2024.
- 2023
- *A road towards models of non-classical set theories*, Workshop on Algebra-Valued Models and Their Applications, organized by IFIKK, University of Oslo, Norway, 9 November - 10 November, 2023.
 - *Basic mathematics beyond classicality*, 22nd Annual Conference of Calcutta Logic Circle 2023, organized by Calcutta Logic Circle in collaboration with Ramakrishna Mission Residential College (Autonomous), Narendrapur, India, 12 August - 14 August, 2023.
 - *Basic mathematics beyond classicality*, 22nd Annual Conference of Calcutta Logic Circle 2023, organized by Calcutta Logic Circle in collaboration with Ramakrishna Mission Residential College (Autonomous), Narendrapur, India, 12 August - 14 August, 2023.
 - *Do we need numbers to count?*, A Seminar on “Mathematics - Understanding the Fundamentals”, organized by the Department of Mathematics, Taki Government College, Taki, India, 8 May, 2023.
- 2021
- *Constructing illoyal algebra-valued models of set theory*, Annual Conference of the Australasian Association for Logic, will be virtually hosted by the University of Queensland and the University of Melbourne, Australia. 23 June - 25 June, 2021.
 - *What is a set?*, A National Webinar on “A Few Basic Foundational Aspects of Mathematics”, organized by the Department of Mathematics, Sree Chaitanya College, Habra, India, 18 June & 25 June, 2021.
 - *ZF between classicality and non-classicality*, UNICAMP-Konstanz Philosophy of Set Theory Seminar, organized jointly by the University of Campinas, Brazil and the University of Konstanz, Germany, 11 March - 24 June, 2021.
 - *Quotient models for a class of non-classical set theories*, 9th Indian Conference on Logic and its Applications (ICLA 2021), organized online by the Association for Logic in India, 4 March - 7 March, 2021.
 - *Models of non-classical set theories*, organized by the Association for Logic in India under the Conseil International de Philosophie et des Sciences Humaines (CIPSH), UNESCO, on the occasion of World Logic Day, 14 January, 2021.
- 2019
- *Cardinality in a model of paraconsistent set theory*, Studies in mathematical logic, University of São Paulo, Brazil, 5th - 6th December, 2019.
 - *Foundations of mathematics in a model of paraconsistent set theory*, Logic Colloquium, 2019, European Summer Meeting of the Association for Symbolic Logic, Prague, Czech Republic, 11th August - 16th August, 2019.

- *Constructing illoyal algebra-valued models of set theory*, 16th International Congress on Logic, Methodology and Philosophy of Science and Technology, Prague, Czech Republic, 5th August - 10th August, 2019.
 - *Paraconsistent set theory*, Pre-conference workshop, 8th Indian Conference on Logic and its Applications (ICLA 2019), Department of Computer Science and Engineering, Indian Institute of Technology (IIT), Delhi, India, 1st March - 5th March, 2019.
- 2017 *Logic of an algebra \mathbf{A} and the logic of $\mathbf{V}(\mathbf{A})$* , 19th Annual Seminar on Logic and its Applications, Department of Pure Mathematics, University of Calcutta, Kolkata, India, 13th October - 15th October, 2017.
- 2016 *A three-valued paraconsistent logic \mathbf{LPS}_3* , Merging Borders in Logic and Philosophy of Mathematics, Department of Philosophy, University of North Bengal, North Bengal, India, 17th November, 2016.
- 2015
- *A paraconsistent set theory*, International Seminar on History and Philosophy of Mathematics II: Pluralism in Mathematics, Ramakrishna Mission Institute of Culture, Gol Park, Kolkata, India, 10th December - 12th December, 2015.
 - *Natural numbers in a model of some paraconsistent set theory*, Annual Meet of Calcutta Logic Circle: Logic and its Applications, Indian Institute of Bio-Social Research and Development, Kolkata, India, 6th November - 8th November, 2015.
 - *Non-classical set theories and logics associated with them*, Institute of Mathematical Sciences, Chennai, India, 23rd June, 2015.
 - *Ordinals in an algebra-valued model of a paraconsistent set theory*, 6th Indian Conference on Logic and its Applications, Indian Institute of Technology (IIT), Bombay, India, 8th January - 10th January, 2015.
- 2014
- *A glimpse of paraconsistent logic(s) and \mathbf{LPS}_3* , International Seminar on History and Philosophy of Mathematics 2014, Bose Institute, Kolkata, India, 20th February - 22nd February, 2014.
 - *A paraconsistent logic obtained from an algebra-valued model of set theory*, 5th World Congress on Paraconsistent Logic, Indian Statistical Institute, Kolkata, India, 13th February - 17th February, 2014.
- 2013
- *A new three valued paraconsistent logic*, International Seminar on Logic and Cognition (SLC 2013), Jadavpur University, Kolkata, India, 30th October - 1st November, 2013.
 - *The logic \mathbf{LS}_3 and its comparison with other three-valued paraconsistent logics*, 13th Asian Logic Conference (ALC 2013), Sun Yat-sen University, Guangzhou, China, 16th September - 20th September, 2013.
 - *The Boolean-valued model construction with algebras of non-standard logics*, Postgraduate Workshop on Alternative Set Theory, University of Amsterdam, Amsterdam, The Netherlands, 22nd June - 24th June, 2013.

- 2012 • *Set theory*, Annual Meet on Logic and its Application: Celebrating the Alan Turing Year, Indian Institute of Bio-Social Research and Development, Kolkata, India, 29th September - 1st October, 2012.
- *Algebra-valued models of set theories*, Semantics and Syntax: A Legacy of Alan Turing, Isaac Newton Institute for Mathematical Science, Cambridge University, Cambridge, UK, 9th January - 6th July, 2012.
- *Foundation of mathematics*, Reading Russell on the Centenary of Principia Mathematica (1910 - 1913), Rabindra Bharati University in Collaboration with Indian Council of Philosophical Research, Kolkata, India, 24th January - 25th January, 2012.
- Delivered a talk in students session in the *4th Indian School on Logic and its Applications (ISLA)*, Sikkim Manipal University, Manipal, 9 January – 20 January, 2012.
- 2011 Delivered a talk in *Logic and its Application*, Annual meet of Calcutta Logic Circle, Indian Institute of Bio-Social Research and Development, Kolkata, India, 2 September – 4 September, 2011.

Conferences, Seminars, and Workshops Organized

- 2022 *21st CLC Annual Meet*, Calcutta Logic Circle, Online International Conference, 14 January – 17 January, 2022.
- 2017 *19th Annual Seminar on Logic and its Applications*, Department of Pure Mathematics, University of Calcutta, Kolkata, India, 13 October – 15 October, 2017.
- 2015 • *International Seminar on History and Philosophy of Mathematics II: Pluralism in Mathematics*, Ramakrishna Mission Institute of Culture, Gol Park, Kolkata, 10 December – 12 December, 2015.
- *Logic and its Application*, IBRAD, Kolkata, 6 November – 8 November, 2015.
- 2014 • *Logic and its Application*, IBRAD, Kolkata, 17 October – 19 October, 2014.
- I was an International BRICS Committee member in the Organizing Committee of the *5th World Congress on Paraconsistent Logic*, Indian Statistical Institute, Kolkata, 13 February – 17 February, 2014.
- 2013 *Logic and Cognition; Celebrating 25 years of Calcutta Logic Circle*, Jadavpur University, Kolkata, 30 October – 1 November, 2013.
- 2012 *Logic and Its Application, Celebrating the Alan Turing Year*, IBRAD, Kolkata, 29 September – 1 October, 2012.
- 2011 *Logic and its Application*, IBRAD, Kolkata, 2 September – 4 September, 2011.

Positions Held

2014 – Till date	Assistant Professor, Business Mathematics and Statistics, Department of Commerce, St. Xavier’s College, Kolkata.
2019 – 2020	Visiting Researcher, Institute of Philosophy and Human Sciences, University of Campinas, São Paulo, Brazil.
Session 2014 – 2015	Guest Faculty, M. Phil. course, School of Cognitive Science, Jadavpur University.
Session 2013 – 2014	Guest Faculty, M. Sc. in Mathematics, Department of Mathematics, Presidency University.
Session 2013 – 2014	Guest Faculty, M.Phil. course, School of Cognitive Science, Jadavpur University.
2011 – 2014	Senior Research Fellow (CSIR – NET), Department of Pure Mathematics, University of Calcutta.
2009 – 2011	Junior Research Fellow (CSIR – NET), Department of Pure Mathematics, University of Calcutta.
2008 – 2009	Lecturer, B. Tech. Division, Pailan College of Management and Technology.

Research Interests

- Classical and non-classical set theories
- Classical logic
- Non-classical logics, specially paraconsistent logic
- Infinite game theory

Recognition and Honor

- Executive Committee Member of the “Association for Logic in India” (India).
- Member of the “Calcutta Logic Circle” (India).
- Member of the “Association for Symbolic Logic” (USA).