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Foundations of Mathematics & Spirituality

Set Theory, Infinity & Beyond

September 6, 2025

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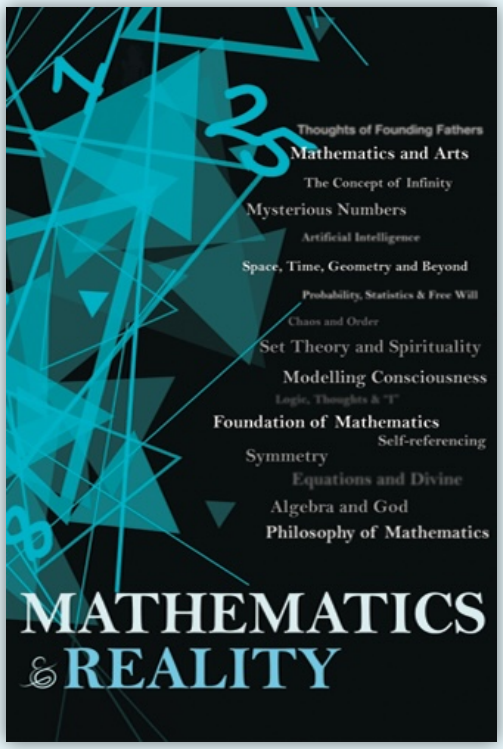

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We perceive objects and understand concepts. Understanding is a different kind of perception.

— Kurt Friedrich Gödel
Logician, Mathematician, Philosopher

Annual Symposium

Foundations of Mathematics & Spirituality

Set Theory, Infinity & Beyond

September 6, 2025

NIT Patna

Organized by

Bhaktivedanta Institute
Kolkata

In Collaboration with

Dept. of Mathematics and
Computing Technology, NIT Patna

Dedicated to

Dr. T. D. Singh

(His Holiness Bhaktisvarupa Damodara Swami)

(1937-2006)

Scientist and Saint

Founder Director, Bhaktivedanta Institute and

Founder President, Vedanta and Science Educational Research Foundation

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Welcome Address

Dear Esteemed Speakers, Delegates, Scholars, and Students,

It is my privilege to extend a warm welcome to you all at this Annual Symposium on the Foundations of Mathematics and Spirituality. Today's gathering is far more than a routine academic exercise; it is an integration of two major streams of humanity's timeless search for knowledge—on one hand, the pursuit of knowledge through science and mathematics, and on the other, the quest for inner meaning and spiritual wisdom.

Mathematics, by its very nature, pushes us to the boundaries of logic, precision, and abstraction. It compels us to seek clarity in the midst of complexity, to discover order where there seems to be chaos, and to stretch the limits of our reasoning toward the infinite. Spirituality, on the other hand, invites us to turn inward—beyond sensory perception and intellectual constructs—toward the domain of consciousness, transcendence, and the ultimate questions of existence. When these two streams converge, something remarkable happens: the rigor of mathematics illuminates spiritual truths with precision, and the depth of spirituality infuses mathematics with meaning and purpose. Together, they open pathways not only to intellectual enrichment but also to moral clarity, inner harmony and peace, and a vision of interconnectedness that extends from the microcosm of the self to the vastness of the cosmos.

This integration is not merely an academic pursuit but a profound necessity for our times. In an age where rapid scientific progress coexists with social fragmentation and existential uncertainty, the dialogue between mathematics and spirituality provides a vital balance. Mathematics imparts discipline and universality, the common tenets of spirituality. Together, they remind us that knowledge is holistic—where logical patterns reflect a deeper cosmic order and inner wisdom complements outer discovery. In this light, the symposium becomes more than an exchange of ideas; it is a shared journey toward truth, where reason and intuition walk hand in hand. To express in the words of

renowned mathematician, Srinivasa Ramanujan, "An equation for me has no meaning unless it represents a thought of God."

The Bhaktivedanta Institute, since its inception under the visionary guidance of its Founder Director, Dr. T. D. Singh, has endeavoured to build platforms where science and spirituality engage in dialogue. This symposium, hosted by NIT Patna, is another step in that mission. It is heartening to see mathematicians, scientists, students and thinkers assemble here to deliberate on profound themes such as set theory, infinity, and the philosophical and spiritual questions they evoke.

I offer my heartfelt gratitude to the Director and the administration of NIT Patna, as well as the Mathematics department for their continuous support. We are also grateful to all the distinguished speakers, and to the young participants who carry the future of this dialogue forward. May this gathering serve as a source of tremendous inspiration to delve deeper every year into the connection between mathematics and divinity and enlighten all of us in our minds and hearts towards transcendence.

With great joy, I welcome you all heartily to this symposium.

Vasudeva Rao
President, Bhaktivedanta Institute
(Alumnus, IIT Kanpur)

About the Symposium

Mathematics has long been recognized as a powerful tool for understanding the nature of reality. Great thinkers such as Isaac Newton, Albert Einstein, and Galileo Galilei have extensively used mathematical principles to decode the mysteries of the universe. Newton's laws of motion, formulated through calculus, describe the predictable behaviour of objects in motion. Einstein's theory of relativity, built on complex mathematical frameworks, reshaped our understanding of space, time, and gravity. Even quantum mechanics, explored by pioneers like Erwin Schrödinger and Werner Heisenberg, relies heavily on mathematical probabilities to explain particle behaviour at the atomic and subatomic levels. Mathematics provides a precise language to express natural laws, making it essential for scientific inquiry and technological advancement. Whether modelling the orbits of planets or predicting weather patterns, mathematics reveals the underlying order in the seemingly chaotic universe.

However, though mathematics excels at explaining how things work, it still leaves us with deeper questions such as why they exist; as well as the deeper questions of meaning and purpose; the mysteries of consciousness, the origin of universe, morality, infinity, beauty, and free will. They still puzzle us. On the other hand, age-old spiritual wisdom also provides us with a conceptual framework for the dynamics and foundations of our existence. Spiritual knowledge can enhance our knowledge base by complementing our mathematical understanding by offering a framework to explore meaning, interconnectedness, and the deeper essence beyond measurable facts, helping us understand both the physical reality and realms beyond it. Could they together unite in our search for understanding the ultimate reality?

Take for example, the famous mathematical genius, Srinivasa Ramanujan. He is well-known for his extraordinary mathematical contributions which stand as a testament to the mysterious depth of mathematics. Ramanujan's intuitive grasp of complex mathematical identities, infinite series, and modular functions astonished mathematicians worldwide. Remarkably, Ramanujan credited many of his insights to spiritual visions, blending his deep mathematical genius with a profound sense of divine inspiration. Could we further explore the source of mathematical intuition? Could that

serve as one of the platforms for bringing together mathematics and spirituality, as depicted in the life of Ramanujan?

Could we look at the tools, achievements and works of mathematics through the lens of spiritual wisdom? Great philosophers like Pythagoras, for example, believed that numbers held mystical meanings. Many great thinkers looked for a spiritual significance of mathematical principles such as Fibonacci sequence, fractals, and the golden ration. Equally thought-provoking and awe-inspiring have been the mathematical concepts of Infinity, imaginary numbers and irrational numbers.

What about exploring some of the concepts talked in ancient Indian texts using the lens of mathematics? Could we, for example, explore the vital concepts of God, soul, Karma, rebirth, meaning and purpose of life, etc., mentioned profoundly in ancient Indian texts using the beautiful language of mathematics? Many renowned mathematicians such as Blaise Pascal, Kurt Gödel and others had made insightful and amazing attempts, for example, to explore the existence of God using mathematical tools. Could we further explore along similar lines other spiritual concepts using the wonderful tools of mathematics?

This year's theme is Set theory, Infinity and Beyond. Set theory is the foundational language of mathematics, enabling us to define and relate all mathematical objects with precision. It plays a key role in understanding infinity, especially through Cantor's work on transfinite numbers and cardinalities. These discoveries revealed that infinity can be structured and compared, challenging both mathematical and philosophical perspectives. Such insights resonate with spiritual traditions that speak of an ordered, infinite reality beyond the physical. Thus, could set theory help us to explore deeper mysteries of our existence and our ancient Indian wisdom and concepts?

To explore some of these vital aspects at the interface of mathematics and spirituality, forms the core vision behind these annual series of conferences. It is a humble endeavour and offering to the great science-spirituality dialogue pioneer and Founder Director of the Bhaktivedanta Institute, the Scientist-Saint Dr. T D Singh who envisioned and performed such profound works.

— Organizers
M&S Symposium - 2025

Message from the Director NIT Patna

It is a pleasure to know that the Annual Symposium on Mathematics and Spirituality: Set Theory, Infinity & Beyond, is being organised by Bhaktivedanta Institute, Kolkata, in collaboration with the Department of Mathematics and Computing Technology, NIT Patna on September 6, 2025.

Mathematics, since antiquity, has served as both the language of science and a bridge to profound reflection. From Pythagoras to Ramanujan, numbers and patterns have been seen not merely as abstract entities, but as windows into the very structure of reality. Spiritual traditions, too, have long emphasized ideas of harmony, infinity and the unity of existence- concepts that resonate deeply with mathematical principles.

The symposium provides a unique platform to bring these two streams of human thought together, encouraging dialogue across disciplines that are often perceived as separate, but in fact, are complementary.

I take this opportunity to extend a warm welcome to the organisers, delegates, participants and students for an insightful discussion and exchange of ideas, and extend my best wishes for a successful and productive symposium.

Sincerely,

Prof. P. K. Jain
Director
NIT Patna

... there are various limits to the notion of sets. For example, can you define the set of all sets?

— Enrico Bombieri
Fields Medalist

As soon as I had finished the entire course of study, ... I found myself involved in so many doubts and errors, that I was convinced I had advanced no farther in all my attempts at learning, than the discovery at every turn of my own ignorance.

— René Descartes
Founder of Analytical Geometry

Abstracts & Bio-data of Speakers

Session 1: Inaugural Session

Session 2: Foundations of Mathematics and Spirituality - An Overview

2.1. Mathematics and Spirituality: An Overview

Shri Varun Agarwal, *Director, Bhaktivedanta Institute, Kolkata (Alumnus, IIT Kanpur)*[1]

Mathematics is an unbelievable gift for all of us, as in the words of renowned physicist Eugene Wigner, "The Unreasonable Effectiveness of Mathematics in the Natural Sciences". From physics and biological systems to unknown areas of cosmos, mathematics allows us to penetrate where our instruments cannot reach. Can it also help us to provide insights about what is mentioned in our age-old spiritual traditions? For example, can the preciseness of mathematics help us to present more clearly foundational questions of life, such as the core of all questions – Is there a God? What about Consciousness, Soul and Karma – can they be explored in the light of mathematical concepts we have today?

Interestingly, and which is lesser known, that besides algebras, curves and planes, many renowned mathematicians worked seriously from centuries about these foundational questions talked in spirituality besides their regular mathematical contributions – whether God exists and how can this be logically and mathematically established. From Euler, Cantor and Gauss to Boole, Pascal, Ramanujan and many other

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mathematicians, there were important works penned by them, ranging from their precise logical thoughts to even mathematical analysis and 'proofs' for deeply exploring these questions. The present lecture will attempt to summarise some of these works and share the relevant references for furthering exploring the foundations of mathematics and its connection with age-old spiritual wisdom.

Varun Agarwal (also known as His Holiness Bhaktisvarupa Vrajendrakumar Swami) graduated from the prestigious Indian Institute of Technology Kanpur (IIT Kanpur), India obtaining his B.Tech in Aerospace Engineering (1999). He worked on a project of solar-powered aircraft and was ranked first in his entire department. However, his longing for something deeper about life which always bothered him finally culminated in meeting the illustrious scientist-saint Dr. T. D. Singh (His Holiness Bhaktisvarupa Damodara Swami), the Founder Director of the Bhaktivedanta Institute.

Under his guidance, he began studying ancient Vedantic wisdom, dedicating himself completely for the cause of helping humanity through the interface of scientific temper and spiritual wisdom. He is currently serving as the Director of the Bhaktivedanta Institute, Kolkata, India. Besides his various involvements, he frequently travels across India & abroad and interacts with scientists and scholars all over the world including world-renowned universities of Harvard, Princeton, ETH and Stanford to MIT. He is also the Editor of Bhaktivedanta Institute's reputed science and spirituality journal, Savijnanam.

2.2. Emergence of Basic Set Theory from the Science of Consciousness

Prof. Om Prakash, *Department of Mathematics, IIT Patna*

The fundamentals of set theory are the backbone of modern development in mathematical sciences. This talk presents an overview

of the basics of set theory by connecting foundational connectivities with spirituality and consciousness. Towards this, first, we would recall certain shlokas and mantras of the Puranas and Vedangshashras established by ancient sages and also recall the history of set theory. Then, by showing the emergence of the set theoretic concept, we cite some paradoxes which challenged the consistency of modern mathematics. To address these problems, we again recall some axiomatic systems as a partial solution to the classical paradoxes. Finally, we try to connect these set-theoretic concepts with spirituality for its complete solution.

Keywords: Cantor's set theory, Paradoxes, Axiomatic systems.

Prof. Om Prakash is a distinguished Professor in the Department of Mathematics at IIT Patna, with over 24 years of teaching and research experience. His expertise lies in algebra, coding theory, graph theory, and mathematical structures, where he has made impactful contributions through both theoretical insights and applied research. He holds lifetime memberships in several prestigious societies, including the Indian Science Congress Association, the Indian Mathematical Society, and the Ramanujan Mathematical Society, along with an annual membership of the American Mathematical Society. Prof. Prakash has provided exemplary academic leadership, successfully guiding 11 Ph.D. scholars to completion and currently supervising 7 more, in addition to mentoring numerous M.Phil., M.Tech., and M.Sc. projects. His research has significantly advanced the frontiers of algebraic coding theory, graph theory, and quantum/DNA computing, supported by prestigious SERB-DST funded projects, including work on Skew Cyclic Codes and their Applications in Quantum and DNA Computing.

References

1. G. Cantor, Contributions to the Founding of the Theory of Transnite Numbers, Dover Publications, (1955).

2. A. A. Fraenkel, Y. Bar-Hillel, A. Levy, Foundations of Set Theory, North-Holland, (1973).
3. B. Russell, The Principles of Mathematics, Cambridge University Press, (1903).
4. T. Jech, Set Theory: The Third Millennium Edition, revised and expanded, Springer, (2003).
5. Lord Brahma and rediscovered by Sri Chaitanya Mahaprabhu, Sri Brahma Samhita, trans- lated by Sagar, B. A. Sagar and Bhiksu Tridandi, Quintessence of Reality the Beautiful, with the commentary by Srila Bhaktivinoda Thakur, Sri Chaitanya Saraswat Math, Nabadwip (1992).
6. Maharshi Ved Vyasa, The Bhagavad Gita, Translated by Sadguruacharya Shree Swatantradeo Ji Maharaj, First Edition, Sukrit Oset Press, Jhunsi, Prayagraj (1996).
7. Maharshi Ved Vyasa, Shree Durga Saptashati, Translated by Pandit Ramnarayanadatt Ji Shastri, Gita Press, Gorakhpur, (2020).

Session 3: Set Theory and Karma: Towards an Integrated Understanding

3.1. Set Theory & Concept of Karma

Prof. Manohar Lal Kaushik, *Distinguished Academic, School of Computer and Information Sciences, IGNOU, New Delhi, India*

The discussion here of the topic is based on the ***Logicism view*** of Philosophy of Mathematics, according to which

Mathematics = Logic + Set Theory

Hence, concept of Karma, rather concepts of Karma—as Karma is conceived differently by various Indic religions, and differently even within same religion by different sects—are proposed to be viewed, and analysed from (general) Mathematical perspective.

In this respect, Mathematical frameworks of Karma are proposed at two levels:

1. Meta-Karma concerned mainly about evolution of the related concepts since the pre-Vedic times to the modern ones, and in different Indic religions. For example, in the Rigveda *Karma, as action and its consequences,* had limited meaning of *ritual action*. It is discussed as a sort of mathematical relation, as a subset of the cross-product of set of time-periods and set of Indic religions.
2. Karma: Here, concepts/ connotations of Karma, their evolutions, types, principles, theories, paradoxes *are attempted to be explained* using Set Theory & Logic, Probability Theory & Statistics, Fractals & Network Theory, Chaos Theory, and Complexity Theory.

Having been throughout working in the domains of Formal Sciences & sometimes in Natural Sciences, the topic is quite challenging for me. Hence, the discussion is not a sort of claim of finality or final judgment on the topic. The purpose is to be a part of a discourse on the topic, which is quite relevant for current times, about which the Science-fiction writer ***Isaac Asimov*** says ***"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom."***

The following literature plays significant role in preparing this presentation:

(the link for the literature: https://drive.google.com/drive/folders/1GtHYPVvbHrXxM8K0CSAe-TpyZqWAlp9c?usp=sharing)

- Mathematical Sciences in the Karma Antiquity by Laxmi Chandra Jain, published by Gulab Rani Karma Science Museum, Jabalpur, and Shri Brahmi Sundari Prasthashram Samiti, Jabalpur (M.P.), 2008
- Mathematics and Religion: Our Languages of Sign and Symbol by Javier Leach; Templeton Press. 2010
- KARMA: what it is, what it isn't, why it matters, by Traleg Kyabgon; Shambhala, Boston & London, 2015

- The Naturalistic Principle of Karma Author(s): Karl H. Potter Source: Philosophy East and West, Vol. 14, No. 1 (Apr., 1964), pp. 39-49
- Spirituality in Mathematics, Volker Kessler, Journal for the Study of Spirituality 2019, Vol. 9, No. 1, 49–61 https://doi.org/10.1080/20440243.2019.1581384

Prof. Manohar Lal has teaching and research experience of more than 45 years, having taught Computer Science & Mathematics at various universities including University of Delhi, JNU and South Asian University. Currently, he is teaching, as invited faculty, in South Asian University, Delhi. He is among the pioneers of computer science education in India, having started teaching computer science with that of the first batches of MCA and BCA, in Delhi University, in early 1980's. From years 2000 to 2012, he was Director, School of Computer & Information Sciences, Indira Gandhi National Open University (IGNOU), New Delhi. Earlier, he had been Professor and Head of Computer Science Department and Director, Computer Centre at M.D. University, Rohtak from 1996 to 1998, and at H.P. University, Shimla from 1993 to 1996.

Prof. Manohar Lal is a product of IIT Kanpur, IIT Delhi and University of Delhi. He completed his M. Tech. in Computer Science and Engineering from IIT Kanpur, and pursued his second Ph. D. in Computer Science and Engineering from IIT, Delhi. Earlier, he completed his master's and Ph. D. programmes in Mathematics from University of Delhi. During 1982-83, he visited North Carolina State University for Post-Doctoral work. He has delivered more than 600 hours of lectures through educational channels including EduSat & Gyan Darshan of TV and GyanVani of radio, and hundreds of invited talks in various universities. Prof. Lal has long research experience. Earlier, he worked in the area of 'Error- Correcting Codes' (a branch of Data Communications). Currently, he is working in the areas of Artificial Intelligence, Automation of Reasoning, eLearning,

Computer Security, and Software Engineering. He is a member of a number of national and international academic and professional bodies, and reviewer for a number of national and international journals in Mathematics, Artificial Intelligence and e-learning.

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Session 4: Infinity, Consciousness, and Vedānta Logic: A Mathematical-Spiritual Synthesis

4.1. Mathematical Model and Vedanta Logic

Prof. Sandeep Kumar, *Department of Mechanical Engineering, IIT (BHU), Varanasi*

Functioning of the Universe is very complex which we often represent with the help of simple models. Any model representing functioning of the Universe must be perfectly logical. Every human follows some model for progress and guidance in life. All religions and Dharma provide models for the Universe. A model close to the real Universe will be very useful. Initially we understand simple models but our attempts should be to make our model more accurate.Various logical/ mathematical models on the creation of the Universe are proposed by believers as well as nonbelievers of the God. Axioms based field/ space can lead to a good models in higher dimension where it is not possible to verify results with the help of any experiment. In this presentation, it is intended to show some great similarity between Vedanta and many mathematical concepts of higher dimensions. It is an attempt of continuous efforts to develop a good model.

Dr. Sandeep Kumar is a Professor, Department of Mechanical

Engineering, IIT (BHU), Varanasi. He graduated from MNREC Allahabad and completed post-graduation from BHU, Varanasi. His field of interest is Computational Mechanics. After completing Ph.D. from IIT Delhi in the field of composite plates and shells, he has worked in various fields of research such as meshless methods, chaos theory, and wavelets etc. Before joining IIT (BHU), he worked in REC Kurukshetra, BITS Pilani and AIMST, Malaysia. He has completed several research projects for DST and BARC. He has numerous publications in international journals of repute. He has authored a popular book, "Mathematical Theory of Subdivisions - Finite Elements and Wavelet Methods", which is published by CRC press.

4.2. Infinity in Mathematics and Meditation

Prof. Henk Barendregt, *Emeritus Professor, Radboud University, Netherlands*

Thinking about some mathematical concepts may create fear in lay people. Even C. F. Gauss, the prince of mathematics, mentioned the experience of 'horror', when thinking about infinity. On the other hand, practitioners of meditation mention that a first contact with unbounded consciousness causes feelings of awe and nausea. The talk will propose a view, where these reactions come from.

Henk Barendregt (1947) occupies the chair of Foundations of Mathematics and Computer Seience at Nijmegen University, The Netherlands. He studied at Utrecht University mathematical logic, obtaining his Masters in 1968 and his Ph.D. in 1971, both cum laude, under Dirk van Dalen and Georg Kreisel. After a Postdoc period at Stanford University he held positions at Utrecht University and was visiting scholar at Darmstadt, Zūrich (ETH), Siena and Kyoto, and adjunct professor at Carnegie Mellon University. Barendregt is known for his work in lambda calculus and type theory. Since 1986 he is professor at Nijmegen University, where he and his group work on Formal Mathematics, a technology based on the idea of AUTOmated

verification of MATHematics program of N. G. de Bruijn. For a list of results see the page of Freek Wiedijk. Since 01.01.2015 professor emeritus valedictory lecture. For some years Barendregt has been studying consciousness, see the MBM papers below. Awards Barendregt was elected member of the Academia Europaea (1992), Koninklijke Hollandsche Maatschappij der Wetenschappen (1995) and the Royal Dutch Academy of Sciences (1997). In 1998 he obtained a generous seven year grant of the Board of Directors of Nijmegen University. In 2002, he was knighted in the *Orde van de Nederlandse Leeuw*. Barendregt obtained on February 6, 2003 the NWO Spinoza Award 2002, the highest scientific award in the Netherlands. In 2012 he obtained the Distinguished Lorentz Fellowship, a joint prize by the Netherlands Institute of Advanced Studies and the Lorentz Center Leiden, organizing a workshop on Models of Consciousness and Clinical Implications.

4.3. Dr TD Singh's Equation of life: A Computer Simulation Model of Consciousness based on Sāṅkhya

Shri Vasudeva Rao, *President, Bhaktivedanta Institute (Alumnus, IIT Kanpur)*[1]

Life = Physical Body (C, H, O, Genome, Space, Time) + Mind, Intelligence, False Ego (Psychic Body) + Soul (Spiriton)

In this talk we use the computer game (simulation) as an example to explain the functions of the subtle or psychic elements of sāṅkhya. sāṅkhya is an Indian school of philosophy which explain the reality through systematic enumeration of fundamental entities (particles or forces) using the reasoning and subjective and objective experience of reality. Two of the relevant meanings of sāṅkhya are to 'enumerate or count' and 'reason.' The detailed sāṅkhya is given by Lord Kapila in the Śrīmad-Bhāgavatam, the natural commentary on the Vedānta-

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sūtra by the author himself. A little simplified sāṅkhya is presented in the Bhagavad-gītā. Sāṅkhya divides reality into two fundamentally different and irreducible categories, consciousness (kṣetra-jña, or puruṣa) and matter (kṣetra, or prakṛti). Souls and God come in the category of former and the remaining elements in the later. In the prakṛti category there are again two categories, gross and subtle elements. In the gross category are pancha Mahābhūtas, earth (bhūmiḥ), water (āpaḥ), fire (analaḥ), air (vāyuḥ), and space (kham). These elements are more fundamental than the earth, water etc. that are visible to us.

In the subtle category are mind (manaḥ), intelligence (buddhiḥ), and ego (ahaṅkāraḥ). Time is considered as an important mixing element. For the scientific mind, gross elements and their functions are easier to comprehend. However, subtle elements and their functions are comparatively little difficult to understand. Mind-matter problem is still an unresolved issue and many terms like mind and consciousness are used synonymously in modern science. These subtle elements act as a glue between the consciousness and the body of living entities to allow the consciousness to bind to a particular body. When we play a computer game, the same elements play a role to absorb ourselves in the game-world and bind to game character. We also reflect upon the space and time. We use some examples of modern science and computer game example to draw parallels to understand the applications and limits of reason and logic to spiritual realities.

References:

1. Singh, T. D. Consciousness: Scientific and Vedantic Perspectives. Bhaktivedanta Institute, Kolkata, 2012.
2. Singh, T. D. Life And Origin Of The Universe – Vedanta & Science Series, Bhaktivedanta Institute, Kolkata, 2004.
3. His Divine Grace Bhaktivedanta Swami Prabhupada, A. C. Srimad-Bhagavatam, Third Canto, Chapter 26, The Bhaktivedanta Book Trust, 2012.

Vasudeva Rao (also known as His Holiness Bhaktisvarupa Vrajapati Swami) obtained his M.Tech. (Computer Science, 1998) from IIT Kanpur, India. After a brief tenure of working as a software professional, he decided to significantly contribute himself to the science spirituality interface under the able leadership and vision of Dr. T. D. Singh, the Founder Director of the Bhaktivedanta Institute.

Presently, His Holiness is the President of Bhaktivedanta Institute and actively promotes discussion on science and spirituality. He is also the Editor of Bhaktivedanta Institute's reputed annual journal, Savijnanam – Scientific Exploration for a Spiritual Paradigm and travels widely across India and abroad. His deep interest in the foundations of mathematics, fundamentals of computer science and logic and its relation to nature of reality as well as ancient Indian texts led him to interact and meet renowned scholars at Harvard, Princeton, ETH, Stanford, and MIT. He has delivered several talks on topics at the interface of science and spirituality.

Session 5: Young Minds Speak

5.1. Mathematics is the Language of God

Ms. Tanushri, *Ph.D. Scholar, Department of Mathematics and Computing Technology, NIT Patna*

Mathematics is often called the universal language, but it is also the language of the divine. Across civilisations, mathematical ideas such as zero and infinity, symmetry and geometry, or the harmony of proportions have been seen as reflections of higher truths. Nature itself reveals this sacred code, such as the spiral of a seashell follows the Fibonacci sequence, the sunflower arranges its seeds with mathematical precision, and galaxies swirl in geometric patterns. Spiritual traditions, too, echo these concepts like shunya as emptiness full of potential, ananta as the infinite, and the circle as a symbol of

eternity. Dualities in mathematics mirror dualities in life, while abstraction in equations reflects the unseen yet deeply real presence of the divine. Mathematics is not merely a tool of science, but a bridge between human understanding and cosmic order that is the very script in which God has written the universe.

Ms. Tanushri is a Ph.D. scholar in Mathematics at the National Institute of Technology, Patna, with research interests in Analysis, Summability Theory, Fuzzy Sequences, and Fuzzy Logic. She has published in reputed journals such as Axioms and Filomat and has presented her research at various national and international conferences, including the Indian Mathematical Society Annual Conference and the International Conference on Advances in Mathematical Sciences. Beyond research, she serves as the President of the Science and Environment Club at NIT Patna and has been actively engaged in organizing academic workshops and contributing to science outreach programs.

5.2. Beyond Numbers: The Spiritual Significance of Zero, One, and Infinity

Mr. Rajesh Pandit, *Quality Analyst, Straive; Alumnus, IISER Kolkata*

Numbers are more than mathematical tools; they carry deep philosophical and spiritual meaning. This presentation explores the profound significance of zero (śūnya), one (ekatva), and infinity (ananta) as understood in ancient Indian wisdom and their relevance today. We begin with the origin of zero in India—not only as a numerical invention but as a symbol of emptiness and the source of creation. We then contrast linear and cyclic worldviews of time, showing how science and spirituality interpret these concepts differently. The talk highlights the spiritual perspectives where zero signifies nothingness, one symbolizes unity, and infinity represents boundlessness and divinity. Their interrelationship reveals a continuum—from emptiness to limitless expansion—mirroring the

soul's journey from origin to eternity. By connecting mathematics, philosophy, and spirituality, this presentation offers a holistic lens to bridge the tangible and intangible dimensions of existence.

Mr. Rajesh Pandit holds a BS-MS in Mathematics and Statistics from IISER Kolkata and is pursuing a BS in Data Science and Applications at IIT Madras, with student membership in the Institute of Actuaries of India. He has over five years of experience as a Subject Matter Expert and Quality Analyst with organizations like Chegg India, Hurix Digital, and Straive, specializing in statistical modelling, probability, and data interpretation. An experienced educator in mathematics and statistics at school and undergraduate levels, he is a DST-INSPIRE Scholar and has earned distinctions in academic writing, combining teaching, research, and applied data science to inspire learners.

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About
Bhaktivedanta Institute

The Bhaktivedanta Institute was founded by His Divine Grace A. C. Bhaktivedānta Swami Prabhupāda in Vrindavan in August 1974. Śrīla Prabhupāda was one of the greatest exponents of Vedic culture in the 20th Century. He strongly felt that modern civilization is completely misdirected by scientific materialism and there is an urgent need to introduce the spiritual knowledge and wisdom of the *Bhagavad-gītā* and the *Śrīmad-bhāgavatam*, the essence of all the Vedic literatures, to the scientists, philosophers, scholars and students of the world. He noticed that all the prestigious academic institutions and universities of the world were teaching many different subjects but they had left out the most important branch of knowledge—the science of the soul. He envisioned that this spiritual knowledge of life would help restore an ethical culture for modern society. Thus, there would be hope for bringing lasting happiness and world peace. He felt that introducing this spiritual culture should be the contribution of India for the welfare of humanity. Śrīla Prabhupāda appointed his disciple Dr. T. D. Singh (Bhaktisvarūpa Dāmodara Swami) as the director of the Institute from its very inception and left several instructions to him to carry forward his vision.

The Bhaktivedanta Institute is a center for Advanced Studies in Science and Vedānta and focuses on a consciousness-based paradigm. This spiritual paradigm has a unique potential to resolve

the mind-body problem, the question of evolution and life's origin and many other philosophical and ethical concerns. Thus, this paradigm will have profound significance for science, religion, and their synthesis. One of the primary objectives of the Bhaktivedanta Institute is to present this paradigm for the critical attention of serious scholars and thinkers throughout the world. As such, the Institute supports a closer examination of existing scientific paradigms in cosmology, evolution, physics, biology, and other sciences. The Institute also promotes scientific, philosophical and religious dialogues among scientists, scholars and theologians of the world covering various common conceptual grounds of science and religion for the purpose of creating a better and harmonious understanding among all people. In order to achieve these goals, the Institute organizes international conferences regularly and publishes books and journals. Interested persons may contact the secretary of the Institute at:

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About
NIT Patna

National Institute of Technology Patna is the 18th National Institute of Technology created by the Ministry of H.R.D. Government of India after rechristening the erstwhile Bihar College of Engineering Patna on 28.01.2004. NIT Patna marked its humble beginning in 1886 with the establishment of pleaders survey training school which was subsequently promoted of Bihar College of Engineering Patna in 1924. This made this institute the 6th Oldest Engineering Institute of India. The graduate level curriculum was later elevated to the post graduate level in 1978. The institute is situated on the south bank of holy river Ganges behind Gandhi Ghat, one of the most important and reverential place of Patna. The Gandhi Ghat is associated with the immersion of ashes of father of the Nation Mahatma Gandhi in the river Ganges. The campus has a picturesque river view with historic building presenting a spectacle of architectural delight and natural beauty.

National Institute of Technology Patna has been declared as an Institute of National Importance and has been granted a fully Autonomous Status by MHRD, Government of India. The Institute has also been declared as a Centre of Excellence of impart high level education training, research and development in science, engineering technology and humanities. It is imparting high quality education & values at UG (B.Tech), PG (M.Tech) & Ph .D programmes through its experienced faculty well versed in their respective field of engineering an technology with well equipped laboratories. At present the Institute has seven disciplines viz. Architecture, Civil Engineering, Compute

Science & Engg., Electrical Engg., Electronics & Communication Engg., Information Technology and Mechanical Engg., and well established departments of physics, Mathematics and Humanities and Social Science.

Ever since its rechristening, NIT Patna has been on the fast track of development and has undergone numerous facelifts because of which placement records have witnessed unprecedented growth and is touching new heights as the graph of placement is increasing remarkably.

About the Depatment of Mathematics and Computing Technology

The Department of Mathematics came into existence in 1924 as one of the primary departments of Bihar College of Engineering, and later became part of NIT Patna in 2004 to cater to undergraduate teaching. In 2024, it was renamed as the Department of Mathematics and Computing Technology.

Over the years, the department has been evolving steadily and making significant contributions in producing well-trained mathematicians. At present, it is served by a team of seven dynamic and dedicated faculty members who, apart from offering a wide range of undergraduate and postgraduate courses, are actively engaged in interdisciplinary and core research across various domains of mathematics. Since the academic year 2022-2023, the department has been offering a Dual Degree program (B.Tech. + M.Tech.) in Mathematics and Computing Technology. In addition, it runs both core and advanced mathematics courses at the undergraduate and postgraduate levels, serving students from multiple engineering and science disciplines. The department also has its own Ph.D. program, aimed at fostering young minds in research across diverse areas of mathematics, thereby contributing to the nation's academic and technological growth.

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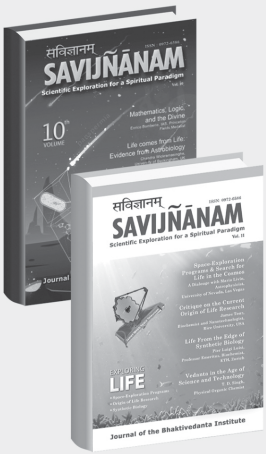

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- ✓ Expert and renowned editorial and advisory board members
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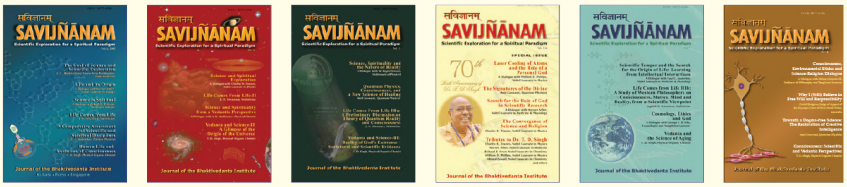

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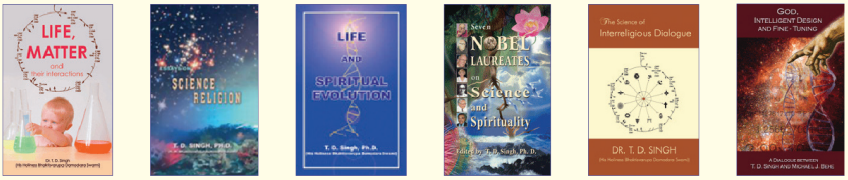

Books on Science - Spirituality

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