DR. SUNIL KUMAR MAURYA

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Marital Status: ...

Received Ph.D. on 22/03/2013 from IIT Roorkee (India) in Mathematics, M.Sc. in Mathematics from the University of B.H.U. (India) in 2008, and B.Sc. in Maths & Physics from the University of Lucknow (India) in 2006. His research interests are- Differential equations, General Relativity, Cosmology, Similarity transformations (Lie group of transformations).

Dr- Sunil UoN CV.pdf

Academic Qualifications

Ph.D, IIT Roorkee, 2013

Teaching Activities

Engineering Mathematics-I, Differential Calculus, Integral Calculus, Ordinary differential equations and Fourier series

Engineering Mathematics-III:, Matrix, Vector space and Complex analysis.

Calculus-II, hyperbolic, inverse trigonometric functions, techniques of integration, Applications of integration (volumes, surfaces, arc-length), the definite integral, sequences and series, Taylor polynomials and approximation.

Calculus-I, Limits, Differentiation, Integrations

Precalculus

Differential Equations

Mathematical Economics : , derivatives and optimization techniques for functions, basic techniques of integration, definite integrals. The emphasis is placed on applications of derivatives and integrals to various problems from business, economics and finance.

Foundation of Mathematics, Logic and proofs, Sets, Relations, Equivalence Relations, Functions and Cardinality.

Foundation of Analysis, : field axioms, ordered axioms, Supremum and Infimum, Completeness of , Properties of Supremum and Infimum (Proofs of Uniqueness, Approximation, Monotonicity, and Additive Properties, and other properties) , and Archimedean property of real numbers; The dense set. The sets of rational numbers and of irrational numbers are dens in the set of real numbers

Introduction to Number theory, integers, divisibility, primes and their distribution, the theory of congruences, Fermat`s and Euler theorems, and applications

Mathematical Economics for Masters, statics (equilibrium analysis), comparative statics, and optimization problems and dynamics, making use of the following mathematical methods: differential and integral calculus (advanced calculus), dynamic optimization, linear programming and differential equations. They will be able to select and apply appropriate techniques to solve problems apply mathematical and graphical techniques in an appropriate manner.

Engineering Mathematics-II:, Vector calculus, Partial Differential Equations and Laplace transforms

Research Activities

- Research Interests

Modelling of compact stars, Astronomy & Astrophysics

Differential Equations

General Relativity and Cosmology

Exact solution of Einstein-field Equations

- Publications

Article:

1. 2019 A generalized family of anisotropic compact object in general relativity, Annals of Physics 395 (2018) 152–169

2. 2019 Charged anisotropic strange stars in general relativity, Eur. Phys. J. C (2019) 79:33

3. 2019 A study on charged compact stars, International Journal of Modern Physics D, Vol. 28 (2019) 1950053 (19 pages)

4. 2019 Generalized relativistic anisotropic compact star models by gravitational decoupling, Eur. Phys. J. C (2019) 79:85

5. 2019 Anisotropic compact stars in the Buchdahl model: A comprehensive study, PHYSICAL REVIEW D 99, 044029 (2019)

6. 2019 Generalized anisotropic models for conformal symmetry, Eur. Phys. J. C (2019) 79:170

7. 2019 Exploring physical features of anisotropic strange stars beyond standard maximum mass limit in f (R, T) gravity, Monthly Notices of the Royal Astronomical Society, Volume 485, Issue 4, June 2019, page: 5652–5665

8. 2019 Relativisticmodel for anisotropic compact stars using Karmarkar condition, Astrophys Space Sci (2019) 364:66

9. 2019 A generalized Finch–Skea class one static solution, Eur. Phys. J. C (2019) 79:381

10. 2019 A study of anisotropic compact stars based on embedding class 1 condition, International Journal of Modern Physics D, Vol. 28 (2019) 1950116 (19 pages)

11. 2019 Effect of pressure anisotropy on Buchdahl-type relativistic compact stars, General Relativity and Gravitation (2019) 51:86

12. 2019 Study of anisotropic strange stars in f (R;T) gravity: An embedding approach under the simplest linear functional of the matter-geometry coupling, PHYSICAL REVIEW D 100, 044014 (2019)

13. 2018 Role of pressure anisotropy on relativistic compact stars, PHYSICAL REVIEW D 97, 044022 (2018)

14. 2018 Relativistic compact stars with charged anisotropic matter, Chinese Physics C Vol. 42, No. 5 (2018) 055101

15. 2018 New anisotropic fluid spheres from embedding, Eur. Phys. J. A (2018) 54: 68

16. 2018 Charged Vaidya–Tikekar model for super compact star, Eur. Phys. J. C (2018)

78:540

17. 2018 A generalized family of anisotropic compact object in general relativity, Annals of Physics 395 (2018) 152–169

18. 2018 Exact solution of anisotropic compact stars via mass function, Astrophys Space Sci (2018) 363:208

19. 2017 A new model for spherically symmetric charged compact stars of embedding class 1, Eur. Phys. J. C (2017) 77:45

20. 2017 Anisotropic stars for spherically symmetric spacetimes satisfying the Karmarkar condition, Annals of Physics 382 (2017) 36–49

21. 2017 Relativistic modeling of compact stars for anisotropic matter distribution, Eur. Phys. J. A (2017) 53: 89

22. 2017 Anisotropic fluid spheres of embedding class one using Karmarkar condition, Eur. Phys. J. C (2017) 77:328

23. 2017 Generating physically realizable stellar structures via embedding, Eur. Phys. J. C (2017) 77:347

24. 2017 All spherically symmetric charged anisotropic solutions for compact stars, Eur. Phys. J. C (2017) 77:360

25. 2017 Generating physically realizable stellar structures via embedding, Eur. Phys. J. C (2017) 77:347

26. 2017 All spherically symmetric charged anisotropic solutions for compact stars, Eur. Phys. J. C (2017) 77:360

27. 2017 A family of charged compact objects with anisotropic pressure, Eur. Phys. J. C (2017) 77:420

28. 2017 Modeling of charged anisotropic compact stars in general relativity, Eur. Phys. J. A (2017) 53: 141

29. 2017 Compact stars with specific mass function, Annals of Physics 385 (2017) 532–545

30. 2016 Generalised model for anisotropic compact stars, Eur. Phys. J. C (2016) 76:693

Membership in Professional Bodies

2014-Present: Editorial Board Member of the International Journal of Modern Physics and Application.

2014-Present: Member of International Association of Computer Science and Information Technology (IACSIT)

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Ref.: https://www.unizwa.edu.om/staff/cas/sunil