Curriculum Vitae

Tuyen Manh Pham, M.Sc.

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Research interests

Cosmology	Cosmic inflation, Cosmic no-hair conjecture, scalar-tensor gravity, Gauss-Bonnet gravity, CMB physics
Gravitational physics	Black holes, wormholes, and gravitational waves
Computer Science	Machine Learning, Data Analysis

Education

2020 – 2022 **M.Sc. Physics, Graduate University of Science and Technology, Vietnam Academy of Science and Technology** in Theoretical and Mathematical Physics
Major: Theoretical and Mathematical Physics (diploma)
Thesis title: *Study of the cosmic inflation in the k-Gauss-Bonnet model*
Advisor: Dr. Tuan Q. Do
GPA: 3.74/4 (transcript)

2016 – 2020 **B.Sc. Physics, VNU University of Science, Vietnam National University, Hanoi**
Major: Theoretical and Mathematical Physics (diploma)
Thesis title: *The eikonal approximation for high energy scattering problem in quantum mechanics*
Advisor: Prof. Nguyen Xuan Han
GPA: 3.62/4 (transcript)

Employment History

2020 – pres **Research Assistant,** Phenikaa Institute for Advanced Study, Phenikaa University
Job Description: Studying and examining some cosmic inflation models in scalar-tensor theory focusing on the Bianchi type I spacetime, non-canonical scalar field, scalar-Gauss-Bonnet gravity, Starobinsky gravity, two-form field scenario, and investigating the stability issues as well as observational constraints of these models

2020 – 2022 **Master Student,** Graduate University of Science and Technology, Vietnam Academy of Science and Technology
Job Description: Study of the cosmic inflation in the k-Gauss-Bonnet model

Research Publications

Journal Articles

1. T. M. Pham, D. H. Nguyen, T. Q. Do, and W. F. Kao, "Anisotropic power-law inflation for models of non-canonical scalar fields non-minimally coupled to a two-form field," *Eur. Phys. J. C*, vol. 84, no. 1, p. 105, 2024. DOI: 10.1140/epjc/s10052-024-12436-y. arXiv: 2309.02690 [gr-qc].
2. T. Q. Do, D. H. Nguyen, and T. M. Pham, "Stability investigations of isotropic and anisotropic exponential inflation in the Starobinsky–Bel–Robinson gravity," *Int. J. Mod. Phys. D*, vol. 32, no. 13, p. 2 350 087, 2023. DOI: 10.1142/S0218271823500876. arXiv: 2303.17283 [gr-qc].

3. H. D. Nguyen, M. T. Pham, D. T. Le, and Q. T. Do, "Anisotropic Constant-roll k-inflation Model," *Commun. in Phys.*, vol. 33, no. 1, p. 15, 2023. DOI: 10.15625/0868-3166/17360. arXiv: 2211.08032 [gr-qc].

4. D. H. Nguyen, T. M. Pham, and T. Q. Do, "Anisotropic constant-roll inflation for the Dirac–Born–Infeld model," *Eur. Phys. J. C*, vol. 81, no. 9, p. 839, 2021. DOI: 10.1140/epjc/s10052-021-09652-1. arXiv: 2107.14115 [gr-qc].

Preprints

1. T. M. Pham, D. H. Nguyen, T. Q. Do, and W. F. Kao, "Stability investigations of de Sitter inflationary solutions in power-law extensions of the Starobinsky model," Mar. 2024. arXiv: 2403.02623 [gr-qc].

2. T. M. Pham, D. H. Nguyen, and T. Q. Do, "k-Gauss-Bonnet inflation," Jul. 2021. arXiv: 2107.05926 [gr-qc].

Activities

Advanced Summer School

09/07/2023 - 29/07/2023 — Attendant in Advanced Summer School in Quantum Field Theory and Quantum Gravity (QFTQG2023)
Place: ICISE, the International Center for Interdisciplinary Science and Education in Quy Nhon, Vietnam
Link: https://indico.in2p3.fr/event/28684/

Scientific talks

01/08/2022 - 04/08/2022 — Title: *A novel k-Gauss-Bonnet power law inflation model*
Even: 47th Vietnam Conference on Theoretical Physics (VCTP-47), Tuy Hoa
Date: 01 - 04 August 2022 Tuy Hoa, Vietnam
Link: https://iop.vast.vn/vctp/47/

Short internship

26/07/2019 - 26/08/2019 — 2019 KAIX Summer Internship Program at Korea Advanced Institute of Science & Technology (KAIST), Daejeon, South Korea
Best Presenter Award at the final presentation at KAIST.
Link: 2019 KAIX summer internship program

Vietnam student olympiad physics

20/04/2019 - 20/05/2019 — Participated in theoretical physics olympiad team HUS for Vietnam students
Consolation prize at Vietnam Student Physics Olympiad in Theoretical Olympiad Team HUS

Skills

Languages — Strong reading, writing, and speaking competencies in English, Vietnamese
Coding — Mathematica, Python, Maple, LaTeX, …
Misc. — Academic research, training, LaTeX typesetting, and publishing

Miscellaneous Experience

Awards and Achievements

2019 **Consolation prize**, Vietnam Student Physics Olympiad in Theoretical Olympiad Team HUS

27/03/2019 **The 5th Nguyen Hoang Phuong Award 2019**, VNU University of Science, Hanoi

26/08/2019 **Best Presenter Award at the final presentation at KAIST**, Korea Advanced Institute of Science and Technology (KAIST), Daejeon

2017-2018 **BIDV Scholarship in 1st semester 2017-2018**, Hanoi

Certification

2023 **Certificate of English Proficiency** by University of Languages and International Studies, VNU, Level 4 (B2)

2022 **Certificate of English Proficiency** by Thai Nguyen University, Level 4 (B2)

2019 **Certificate for KAIX Summer Internship Program** at Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea

27/03/2019 **The 5th Nguyen Hoang Phuong Award 2019**, VNU University of Science, Hanoi

2017 & 2018 **Outstanding Youth Award** Awarded by VNU University of Science, Hanoi

References

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