

Curriculum Vitae

Tuyen Manh Pham, M.Sc.

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Research interests

- Cosmology 📖 Cosmic inflation, Cosmic no-hair conjecture, inflationary models of non-canonical scalar fields, scalar-tensor gravity, Gauss-Bonnet gravity, Hubble tension, CMB physics, Dark Energy
- 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: Study some cosmic inflation models in scalar-tensor theory focusing on the Bianchi type I spacetime, scalar-Gauss-Bonnet gravity, Starobinsky gravity, and two-form scenarios.
- 2020 – 2022 📖 **Master Student**, Graduate University of Science and Technology, Vietnam Academy of Science and Technology

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](https://doi.org/10.1140/epjc/s10052-024-12436-y). arXiv: [2309.02690](https://arxiv.org/abs/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. 2350087, 2023. 📄 DOI: [10.1142/S0218271823500876](https://doi.org/10.1142/S0218271823500876). arXiv: [2303.17283](https://arxiv.org/abs/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](https://doi.org/10.15625/0868-3166/17360). arXiv: [2211.08032](https://arxiv.org/abs/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](https://doi.org/10.1140/epjc/s10052-021-09652-1). arXiv: [2107.14115](https://arxiv.org/abs/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](https://arxiv.org/abs/2403.02623) [gr-qc].
- 2 T. M. Pham, D. H. Nguyen, and T. Q. Do, "k-Gauss-Bonnet inflation," Jul. 2021. arXiv: [2107.05926](https://arxiv.org/abs/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

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|-----------|---|
| 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

Tuan Q. Do 

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