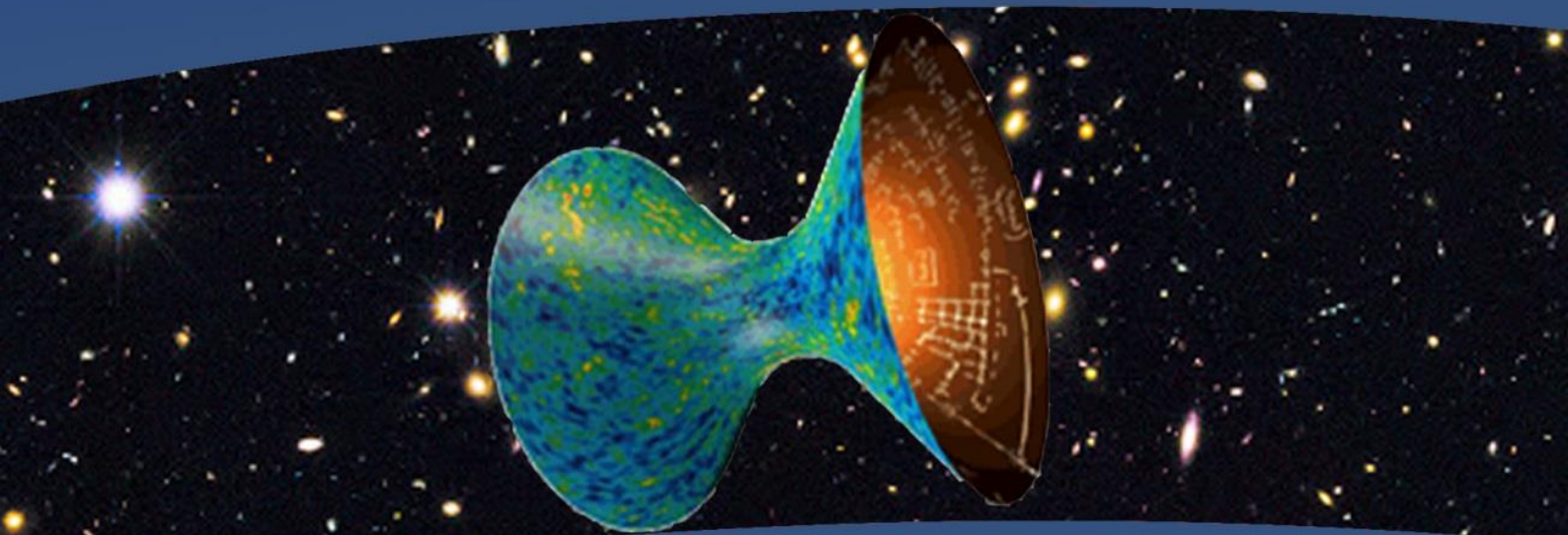




The Graduate School of Science's

# 4<sup>th</sup> monthly Seminar

entitled "**The Expanding Universe**".



Source: Image compiled from Perimeter Institute of Theoretical Physics (July 2020)

**Date/Time:** 28 Aug. 2020/9:00 AM-11:00 AM, **How?** Online using Microsoft Teams

## Who should attend?

Faculty and graduate students who are interested in theoretical physics should attend. To attend, RUPPer or non-RUPPer can access the Google Form via the URL below for **FREE** registration before 25 Aug. 2020.

URL: <https://docs.google.com/forms/d/e/1FAIpQLSeFa8nBiwXKnDQSSs8ma6vq-NH6M-YYacMRps3MXTgJUDCVIrw/viewform>

**Speaker:** Dr. Sunly Khimphun, PhD in Theoretical Physics, **Moderator:** Dr. Ouksaphea Pech

Dr. Sunly Khimphun received his PhD from Sogang Univ., Korea, in High-Energy Physics. He was a post-doc research fellow at the Dept. of Physics (2017-2018) and a post-doc research fellow at Hanyang Univ., Korea (2018-2019). He is now with the Graduate School of Science, RUPP. He authored and co-authored several articles in peer reviewed journals. Google him to see his publications.

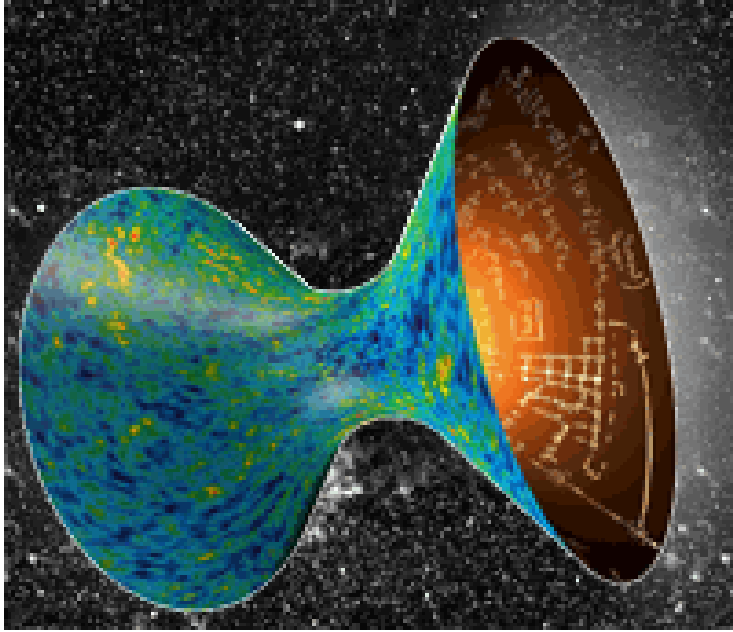
Join us...to learn and share scientific knowledge!

## Abstract

In this talk, I am going to briefly summarize the history of the evolution of the observable universe based on Hot Big Bang Model from the Big Bang to the future fate of the universe for the sake of diversity of the audiences. Then, I will mainly discuss the present universe that keep accelerating by using a model that is one of the applications in String Theory so-called AdS/CFT where the universe is foliated to the boundary of one-higher dimensional black hole. Such Holographic Cosmology will be discussed in the context of both Hairless and Secondary Hairy Black Hole and the data fitting from various observations will be applied to test the model regarding the current expanding universe.

## List of Publications

- Y. Jeong, S. Khimphun, B. H. Lee, G. Tumurtushaa, “Dark Energy Constraints from a five-dimensional AdS Black Hole via AdS/CFT,” EPJ Web Conf. 206 (2019) 09007
- R.G. Cai, S. Khimphun, B. H. Lee, S. Sun, Gansukh Tumurtushaa, and Y.L Zhang, “Emergent Dark Universe and the Swampland Criteria,” Phys. Dark Univ. **26**, 100387 (2019), doi:10.1016/j.dark.2019.100387 [arXiv:1812.11105 [hep-th]]
- S. Khimphun, B. H. Lee, C. Park and Y. L. Zhang, “Rindler Fluid with Weak Momentum Relaxation,” JHEP **1801**, 058 (2018) doi:10.1007/JHEP01(2018)058 arXiv:1705.05078[hep-th]
- S. Khimphun, B. H. Lee, C. Park and Y. L. Zhang, “anisotropic dyonic black brane and its effects on holographic conductivity,” JHEP **1710**, 064 (2017) doi:10.1007/JHEP10(2017)064 [arXiv:1705.00862 [hep-th]]
- S. Khimphun, B. H. Lee, and W. Lee, “Phase transition for black holes in dilatonic Einstein-Gauss-Bonnet theory of gravitation,” Phys. Rev. D **94**, no. 10, 104067 (2016) doi:10.1103/PhysRevD.94.104067 [arXiv:1605.07377 [gr-qc]]
- S. Khimphun, B. H. Lee, and C. Park, “Conductivities in an anisotropic medium,” Phys. Rev. D **94**, no. 8, 086005 (2016) doi:10.1103/PhysRevD.94.086005 [arXiv:1604.00156 [hep-th]]
- X. Bai, S. Khimphun, B. H. Lee, and M. Park, “Dynamical Condensation in a Holographic Superconductor Model with Anisotropy,” JHEP **1409**, 054 (2014) doi:10.1007/JHEP09(2014)054 [arXiv:1405.1806 [hep-th]]



Perimeter Institute of Theoretical Physics (29, July 2020). Holographic Cosmology V2.0.  
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