

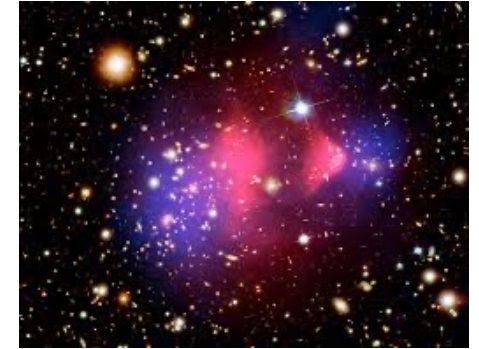
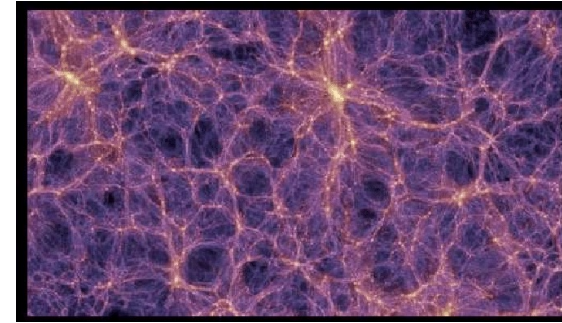
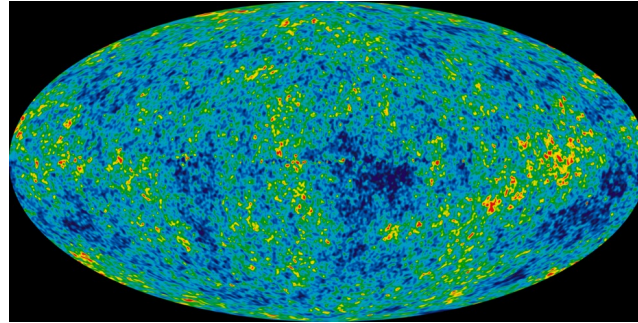
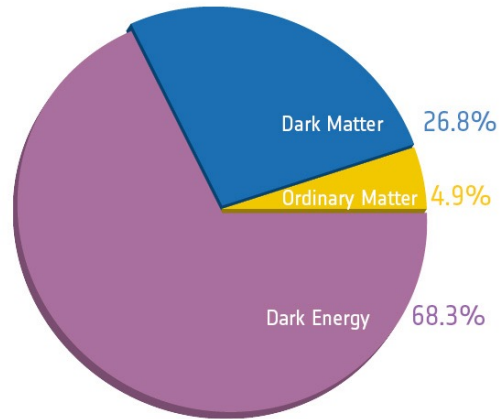
What's New in C01?

Masahito Yamazaki

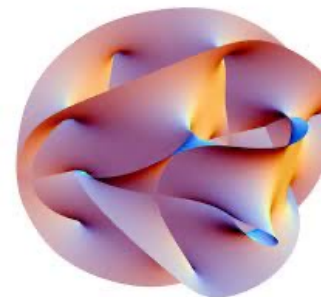


March 7, 2023 @ Kavli IPMU

Much of our knowledge of DM (and DE) comes through **gravity**



... which was **quantum gravity** in the early universe



QG challenges the EFT paradigm for DM

e.g. not all EFTs have consistent UV completion in QG
“technically natural” not always “natural” in QG

Quantum gravity:
navigator for exploring DM discovery space



The Team



**Yasunori
Nomura
(Berkeley)**



**Ryo
Saito
(Yamaguchi)**

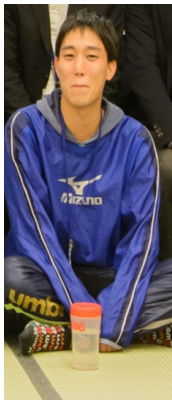
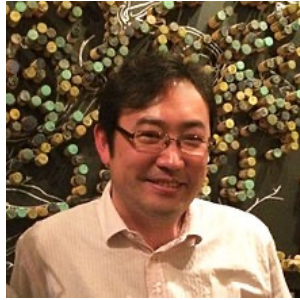


**Satoshi
Shirai
(IPMU)**



**Masahito
Yamazaki
(IPMU)**

The Enlarged Team



Syuhei Iguro
Apr.–Sep. 2021
next: postdoc
at Karlsruhe

Ipsita Saha
Jun.–Sep. 2022
next: faculty at
U. Allahabad

Meer Ashwinkumar
Apr.–Sep. 2023
next: postdoc
at U. Bern

Some recent highlights

“Antipodal angular correlations of inflationary stochastic gravitational wave background”

Z. Wu, **R. Saito**, N. Sakai (2022, PRD)

“Can we explain cosmic birefringence without a light field?”

Y. Nakai, R. Namba, **I. Obata [B06]**, Y. Qiu, **R. Saito** (to appear)

“Searching for the QCD axion with the proposed International Linear Collider beam facility”

H. Fukuda, H. Otono, **S. Shirai** (2022, PRD)

“Interdependence of the new ‘MUON G-2’ result and the W-boson mass”

E. Bagnaschi, M. Chakraborti, S. Heinemeyer, **I. Saha** and G. Weiglein (2022, EPJC)

“Black hole and de Sitter microstructures from a semiclassical perspective”

C. Murdia, **Y. Nomura**, and K. Ritchie (2022, PRD)

Global symmetries in ensemble averages in holography

M. Ashwinkumar, J. Leedom, **M. Yamazaki** (to appear)

One More Thing ...



Shirai



Yamazaki



Saito



arXiv: 2205.12835
from Kobe group



Shirai



Yamazaki



YAMAGUCHI TOKYO



Saito



Toshifumi
Noumi
公募研究



Junsei Tokuda



Sota Sato

New "Positivity" Collaboration



Saito*



Shirai*



Yamazaki*



Katsuki Aoki*
(YITP)



Toshifumi
Noumi*
公募研究
(Kobe→Tokyo)



Sota Sato*
(Kobe→Tokyo)



Junsei Tokuda
(IBS)

(*: on-site today)

Upcoming



Satoshi Shirai



Toshifumi Noumi



Katsuki Aoki