

Student Poster Award Winners

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 - ✓ hope you had fruitful discussions!
- **Every poster caught someone's interest!**
 - ✓ 35 people casted votes, thank you!

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- Gold Prize and two Silver Prizes

Silver Prize Winners

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Shintaro Nakano
(IPMU, the Univ. of Tokyo)

Primordial Non-Gaussianity or Systematics?

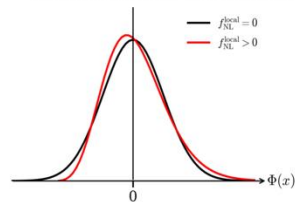
-- Interpreting Galaxy Clustering To Probe the Origin of the Universe --

Shintaro Nakano (D2), Masahiro Takada, Toshiki Kurita, Ryo Terasawa

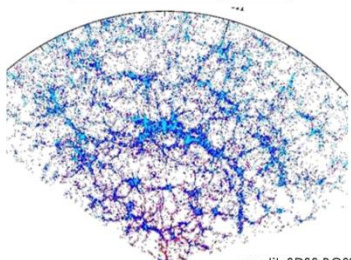


Background

Some inflation models predict
primordial non-Gaussianity (PNG)

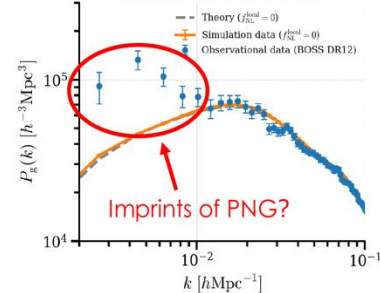


3D distribution of galaxies



credit: SDSS BOSS

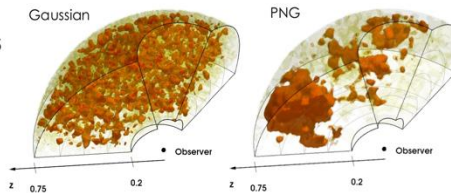
Galaxy power spectrum



What we did

1. Investigated the impact of **angular observational systematics** on the galaxy power spectrum
2. Generated **linear perturbation theory-based simulations** to see how PNG couples to the survey geometry and others

Gaussian

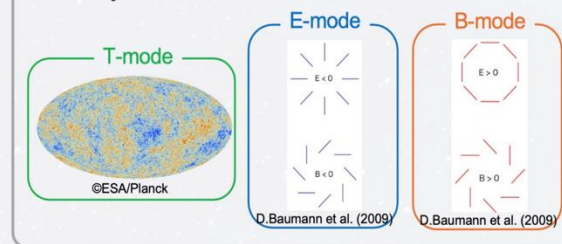


Saki Matsuda
(Ochanomizu Univ.)

Generation of CMB V-mode Polarization by Dark Photons

Saki Matsuda (Ochanomizu U), Tomohiro Fujita (Ochanomizu U), Takashi Hiramatsu (Nihon U), Ippei Obata (KEK)

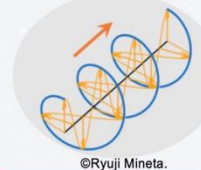
Everyone focuses on...



Don't forget V-mode !

V-mode

Standard cosmology predicts V-mode ~ 0
V-mode is often overlooked...



Is it really zero ?

©Ryuji Mineta.

Photon-dark photon
conversion



Let's generate V-mode !

Gold Prize Winner

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Kenzaburo Kawaguchi (RESCEU, the Univ. of Tokyo)

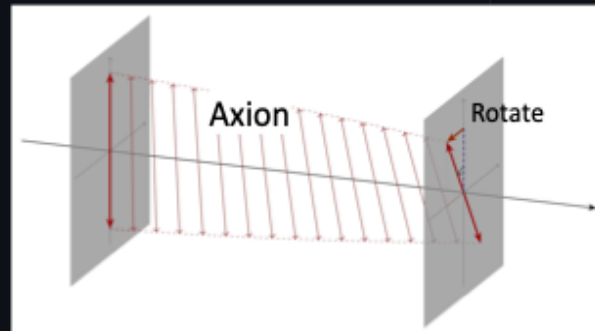
Search for Ultra-light Axion Dark Matter with KAGRA

Kenzaburo Kawaguchi^{1,2}, Hinata Takidera¹, Takumi Fujimori³, Jun'ya Kume⁴, Soichiro Morisaki⁵, Tomohiro Fujita^{6,7}, Ippei Obata^{7,8}, Hiroki Fujimoto⁹, Yuta Michimura^{1,2,7}, for the KAGRA Collaboration

¹The University of Tokyo ²RESCEU ³Osaka Metropolitan University ⁴University of Helsinki ⁵Institute for Cosmic Ray Research, The University of Tokyo ⁶Ochanomizu University ⁷Kavli IPMU ⁸KEK ⁹National Astronomical Observatory of Japan

1 Axion detection via polarization rotation

Axion-photon coupling rotates laser polarization.
KAGRA works as a sensitive polarimeter.

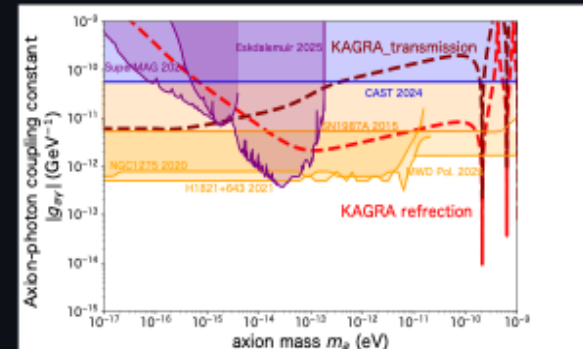


2 Simultaneous observation with GW

Signal frequency follows $f_a \propto m_a$
Runs together with GW observation.

3 Opening the high-frequency band

New data logger opens the high-frequency band.



| Come to Poster 10

Existing limits on axion-photon coupling and projected KAGRA sensitivity

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