

Status Report

Hironao Miyatake
KMI, Nagoya University

DMNet Members: R5 @ Japan

Nagoya University

- Naoshi Sugiyama
- Kiyotomo Ichiki
- Hironao Miyatake
- Hiroyuki Tashiro
- Tomomi Sunayama
- Maxime Paillassa
- Shun Arai
- Katsuya Abe
- Hiroto Kondo
- Koya Murakami
- Shintaro Hayashi
- Ryoto Inui
- Seiya Imoto
- Noriyuki Nakazawa
- Koichiro Nakashima
- Seongwhan Yoon
- Keitaro Ishikawa
- Genki Naruse
- Yuma Matsui
- Yukino Mizuguchi
- Koki Tanida

Kavli IPMU

- Masahiro Takada
- Yongsoo Park
- Toshiki Kurita
- Sunao Sugiyama
- Akira Tokiwa

Kyoto University

- Takahiro Nishimichi

Gifu Shotoku Gakuen

- Atsushi Nishizawa

7 faculty members, 4 postdocs, 17 students

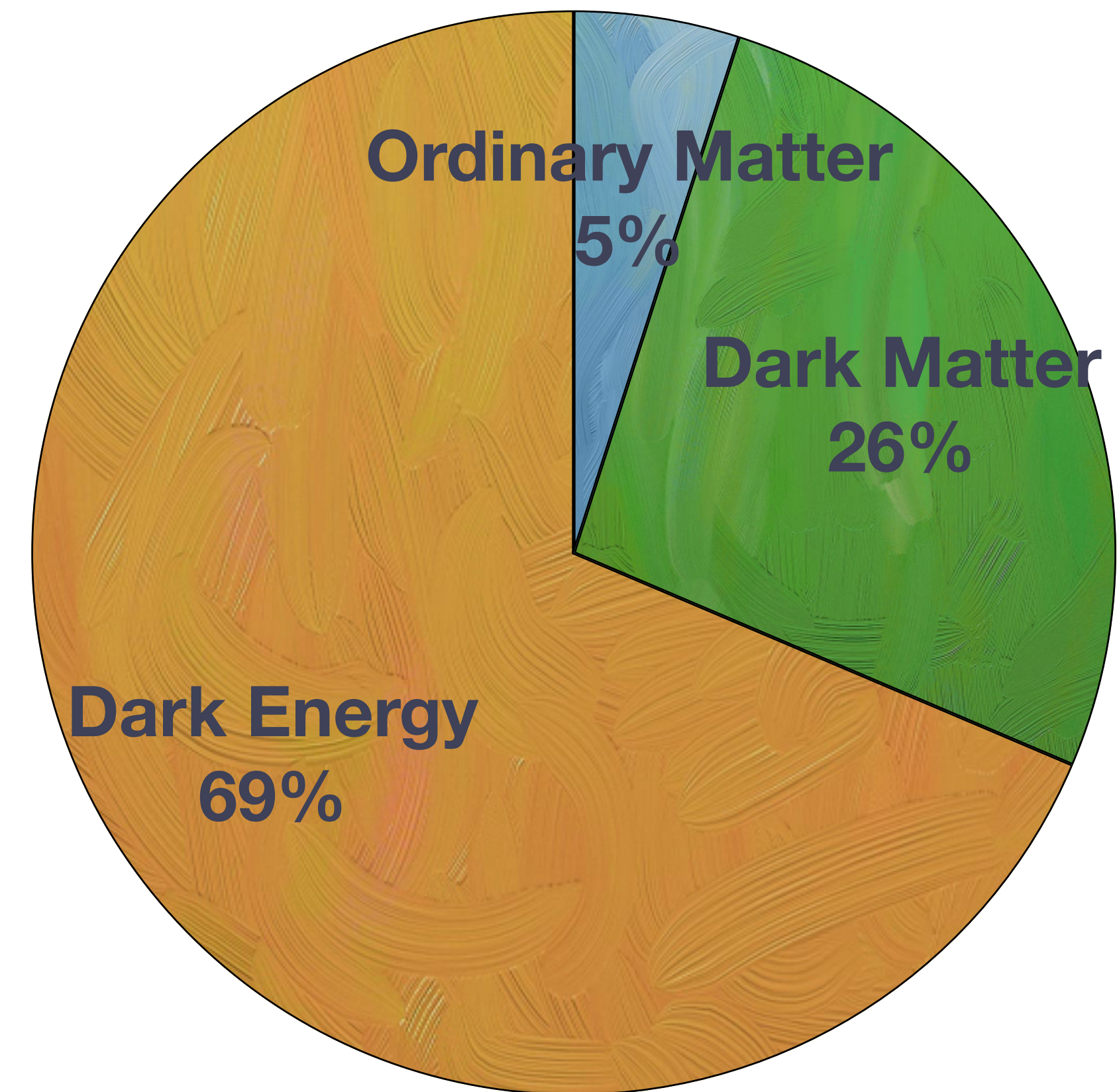
DMNet Members: R5 @ Edinburgh

- John Peacock
- Andrew Taylor
- Catherine Heymans
- Joe Zuntz
- Marika Asgari (→ Faculty@University of Hull)
- Bryan Gillis
- Niraj Weliakala
- David Copeland
- Alex Hall
- Guisepppe Congedo
- Shadab Alam
- Daniele Sorini
- Ben Moews



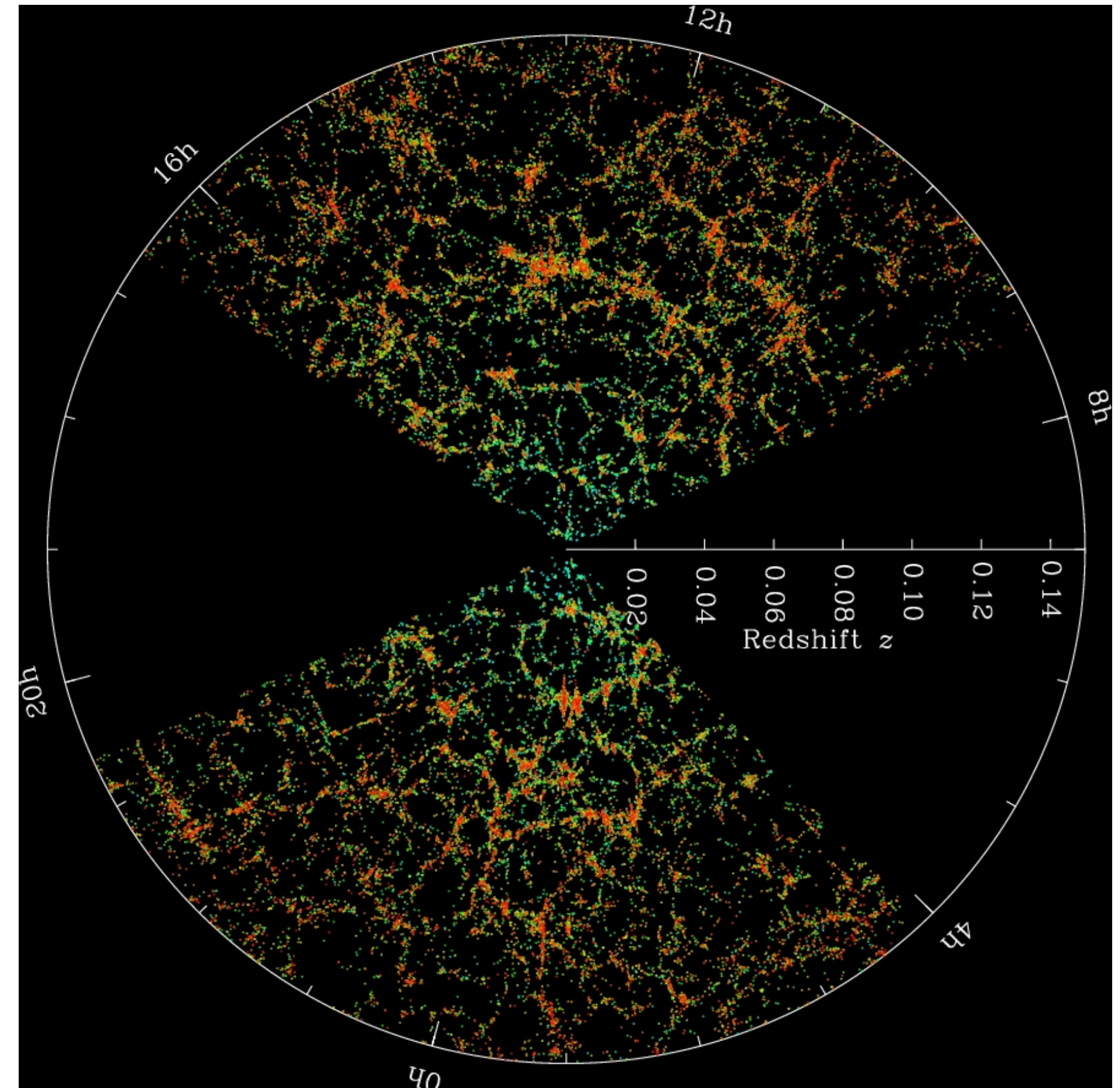
Dark Sector of the Universe

- Dark matter
 - Source of gravity to form a galaxy
 - Unknown matter, **invisible, new particle?**
- Dark energy
 - Source of cosmic acceleration
 - Unknown energy, **new force, breakdown of General Relativity?**



Dark Sector of the Universe

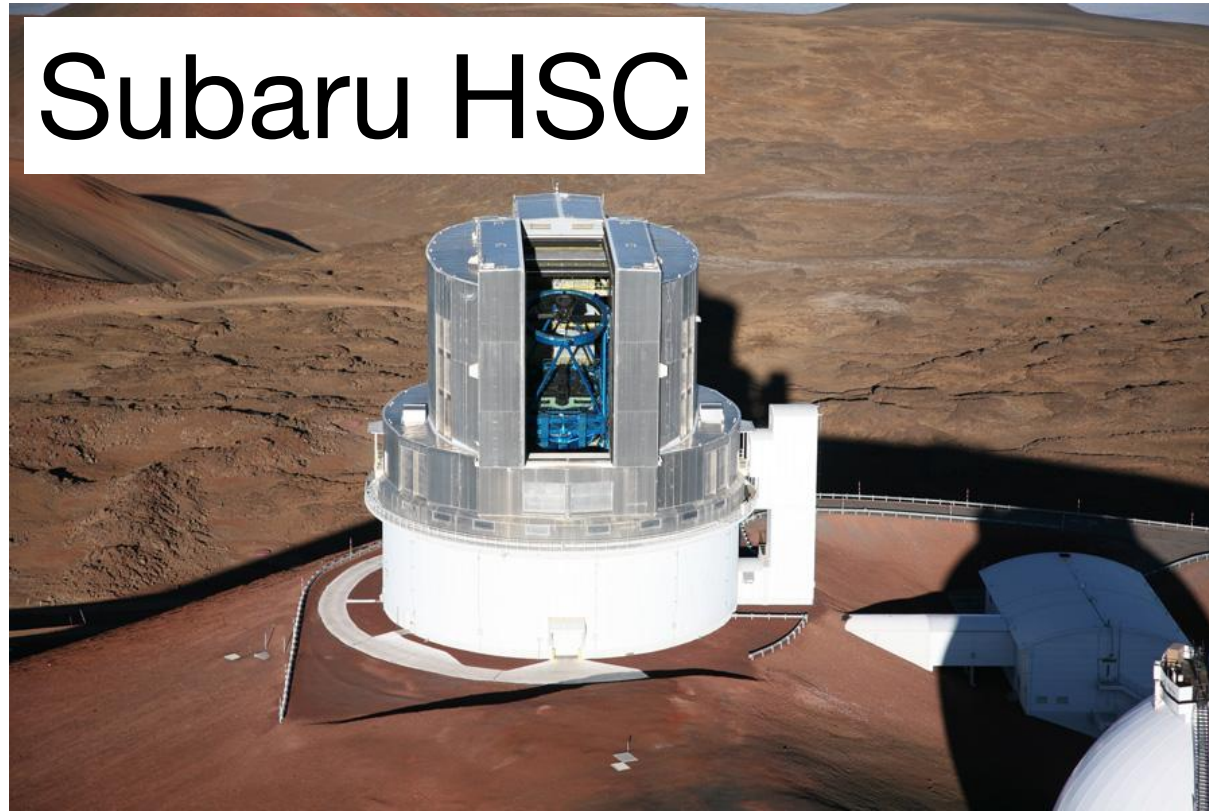
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Large-Scale Structure (map of galaxies and dark matter) measurements tell us the nature of dark matter and dark energy!

Japan

Subaru HSC

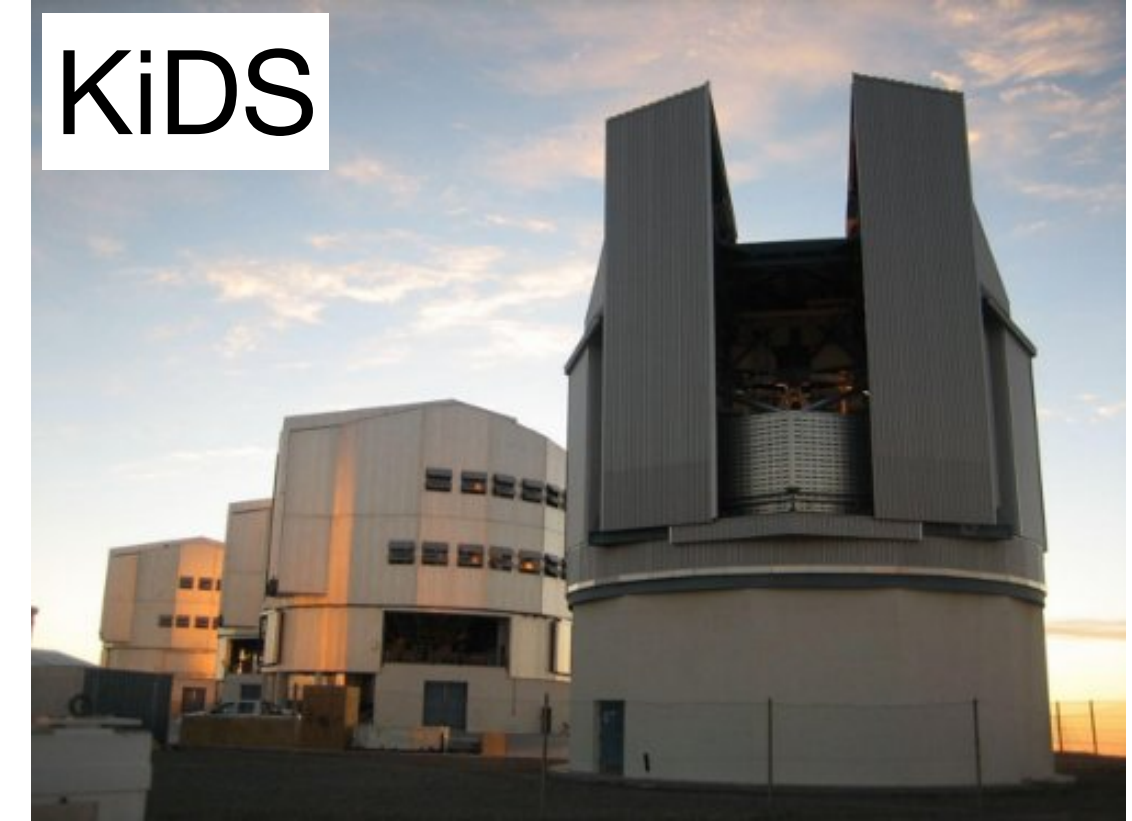


Edinburgh

DES



KiDS



2010s

Edinburgh

DESI



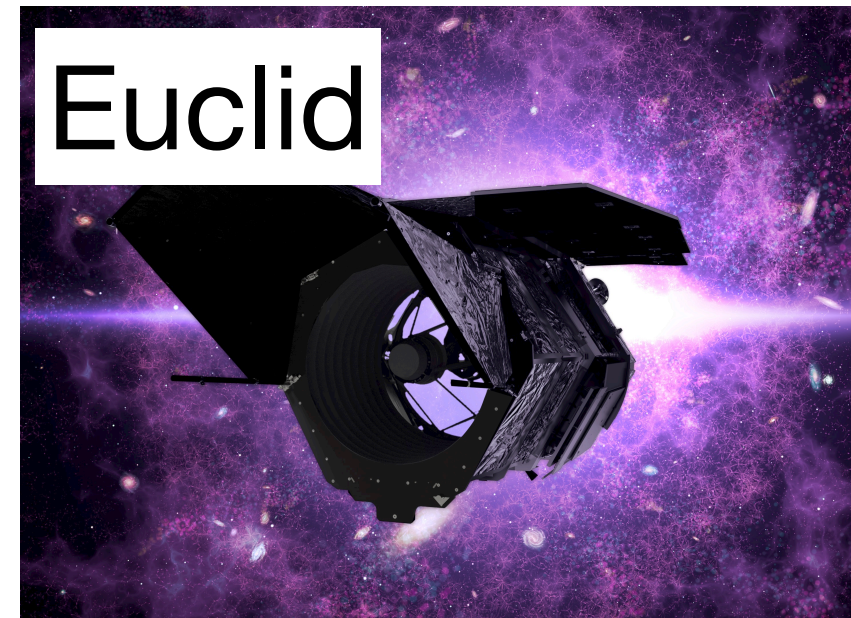
LSST



Roman

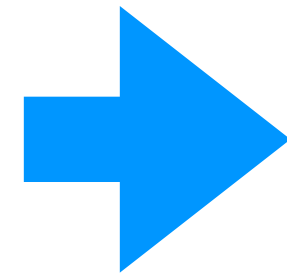
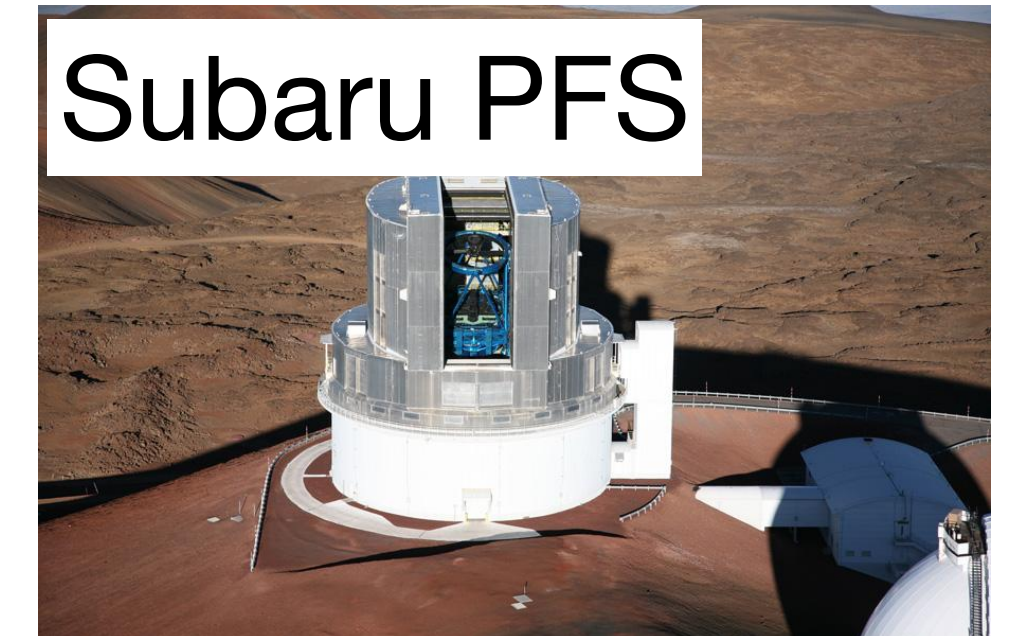


Euclid



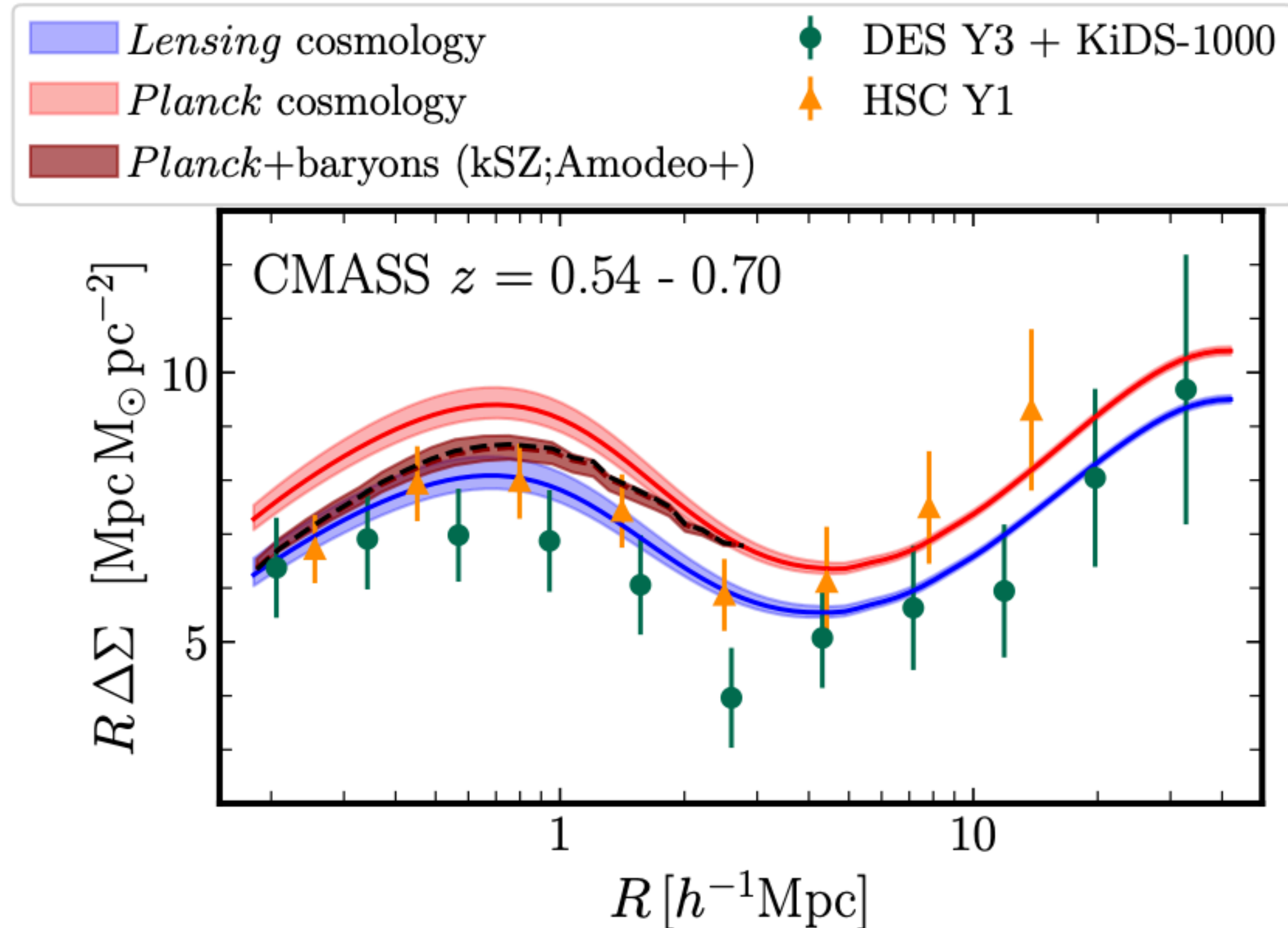
Japan

Subaru PFS

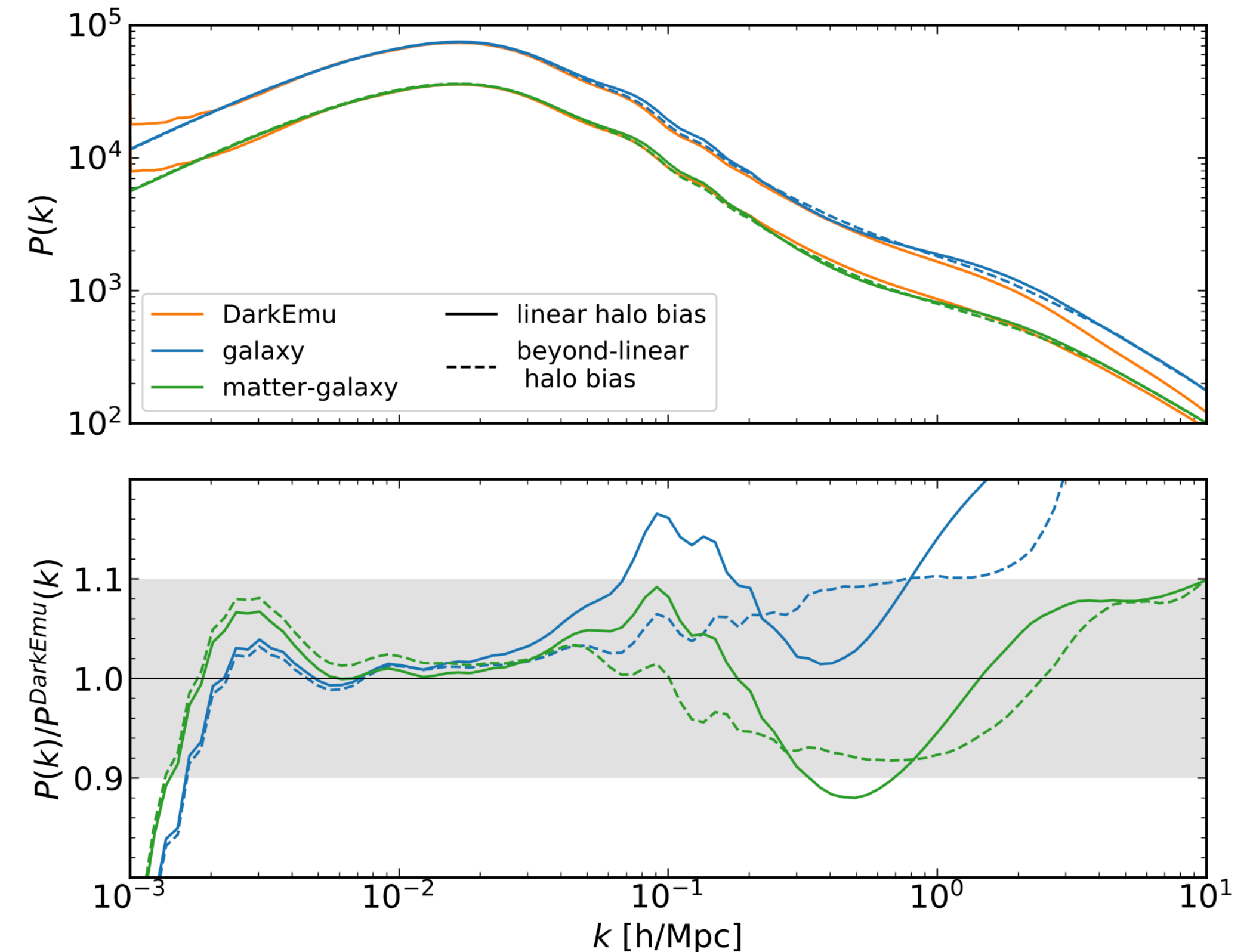


2020s

Two papers were (almost) out!



Amon A., Robertson N. C., **Miyatake H.**, **Heymans C.**, ,..., **Asgari M.**, ..., **Nishimichi T.**, et al. , 2022, arXiv:2202.07440



Mahony C., Dvornik A., Mead A., **Heymans C.**, **Asgari M.**, Hildebrandt H., **Miyatake H.**, **Nishimichi T.**, 2022, MNRAS, 515, 2612.

Dark Emulator, a tool to predict statistics of large-scale structure down to small scales developed by Japanese researchers, was used extensively!

Travels to UK

Hironao Miyatake visited Cambridge and Edinburgh (Jul 5 - Jul 12, 2022).



5-8 July 2022, Centre for Theoretical Cosmology, DAMTP, Cambridge, UK

