

University of Groningen

A journey through the non-Gaussian universe

Kalaja, Alba

DOI:
[10.33612/diss.801008130](https://doi.org/10.33612/diss.801008130)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):
Kalaja, A. (2023). *A journey through the non-Gaussian universe*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.801008130>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Propositions

accompanying the dissertation

A JOURNEY THROUGH THE NON-GAUSSIAN UNIVERSE

by

Alba KALAJA

1. The signal-to-noise ratio of n -point correlation functions in the CMB is naturally affected by projection, and non-trivially affected by the combination of diffusion damping and projection, termed “blurring”. (Chapter 5)
2. The “squeezed” and the “collapsed” limits of n -point correlation functions are not affected by blurring. (Chapter 5)
3. Trispectra that peak in the collapsed limit have a more favorable scaling of the signal-to-noise ratio than the bispectrum. (Chapter 5)
4. The detection of the lensing convergence bispectrum requires an accurate modelling of noise biases. (Chapter 6)
5. The Feynman diagram formalism applied to CMB lensing constitutes an elegant way to highlight the symmetries of correlation functions, reducing the complexity of the calculations of high-order noise biases. (Chapter 6)
6. Given the small magnitude of the lensing convergence bispectrum, reconstruction from CMB anisotropies might benefit from methods that do not introduce biases. (Chapter 6)
7. Observationally, radio surveys allow to probe higher redshifts than those achievable by optical surveys. (Chapter 7)
8. Combining radio weak lensing and CMB lensing can improve constraints on Λ CDM parameters and the neutrino sector with respect to optical and CMB. (Chapter 7)
9. One should be rewarded for their efforts, not their achievements.