A journey through the non-Gaussian universe

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Propositions

accompanying the dissertation

A JOURNEY THROUGH THE NON-GAUSSIAN UNIVERSE

by

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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 ΛCDM parameters and the neutrino sector with respect to optical and CMB. (Chapter 7)

9. One should be rewarded for their efforts, not their achievements.