

Cover Page



Universiteit Leiden



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Propositions accompanying the thesis

The Galaxy–Dark Matter Connection: A KiDS Study

1. The halo bias values for a sample of galaxy groups in the KiDS and GAMA data with the same halo mass but different halo concentrations do not show evidence of halo assembly bias and are consistent with theoretical predictions.

(Chapter 2)

2. Galaxy bias is inherently stochastic and non-linear since satellite galaxies do not strictly follow a Poissonian distribution and their spatial distribution does not follow the host dark matter halo.

(Chapter 3)

3. There is information hidden in the exact spatial configuration of the lenses and their overlaps, which is lost after tangentially averaging the lensing signal around lenses.

(Chapter 4)

4. Two-dimensional galaxy-galaxy lensing is a viable way to measure properties of the galaxy–dark matter connection without using statistically equivalent samples as in the case of the one-dimensional method.

(Chapter 5)

5. A combination of highly complete spectroscopic surveys and deep wide-field imaging surveys is well suited for galaxy-galaxy lensing studies of the nature of dark matter, its interplay with galaxies, and cosmological parameters.
6. The halo model in its current form has several limitations that either require a completely new and fresh approach or at least significant modifications to account for those shortcomings.
7. Significant contributions to large collaborations require a reassessment of the first-author paper paradigm and its importance, as in the case of this thesis.
8. Astronomers should be more open to computational developments in industry and would benefit from the help of computer scientists.
9. This thesis is still missing plethora of ‘a’s, ‘an’s, and ‘the’s.
10. There is only one type of wind in the Netherlands: the headwind.
11. Milk \approx powdered milk \neq creamer
12. “It don’t mean a thing if it ain’t got that swing.” – Duke Ellington and Irving Mills

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