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Spectroscopy of two-field Inflation

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Author: Welling, Y.M.

Title: Spectroscopy of two-field Inflation

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Stellingen

Behorend bij het proefschrift “Spectroscopy of Two-Field Inflation”.

- I The Hamilton-Jacobi formalism might also provide a powerful tool to improve our understanding of universality of inflation with a large number of fields (Chapter 2).
- II The multi-field inflationary potential does *not*, generically, reflect the symmetries of perturbations (Chapter 3).
- III By simply truncating heavy fields one always overestimates the size of the tensor-to-scalar ratio (Chapter 5).
- IV The real benefit of perturbative calculations of large-scale structure for learning about the primordial universe will come when we populate the far side of the moon (Chapter 6).
- V The effective field theory of multi-field inflation by Senatore and Zaldarriaga is too restrictive to describe the most interesting dynamics of multi-field inflation.
L. Senatore and M. Zaldarriaga: JHEP, **04**, 024 (2012).
- VI It is remarkable that Seljak’s multi-tracer technology allows us to test single field inflation to arbitrary precision in an idealized cosmological experiment, limited by shotnoise only.
U. Seljak: PRL, **102**, 021302 (2009).
- VII The conjectured restrictions on the available field range for inflation could *potentially* lead to an upper bound on the tensor-to-scalar ratio on inflation embedded in string theory.
D. Klaeuer and E. Palti: JHEP, **01**, 088 (2017).
- VIII It is equally plausible that dark matter extinguished dinosaurs as that Nemesis did.
L. Randall and M. Reece: PRL, **112**, 161301 (2014).
- IX Propositions, such as the following one, distract attention from the thesis.
- X The last proposition of Margot Brouwer’s thesis “*The last proposition of Yvette Welling’s thesis will be false.*” is true.

Yvette Welling
Leiden, 27-11-2018

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