Properties of double field theory

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Stellingen behorende bij het proefschrift

Properties of Double Field Theory

Victor Alejandro Penas, 21 June 2016

- Strings probe space-time in a different way compared to point particles.

Chapter 2

- The addition of winding coordinates is not an artifact of Double Field Theory (DFT). Only when the strong constraint is assumed, the extra coordinates are physically meaningless.

Chapter 3

- DFT can be formulated with weaker versions of the strong constraint. This is crucial for flux compactifications.

Chapter 4

- In the Flux Formulation, terms that violate the strong constraint enter naturally into the DFT action. These terms are needed to make contact with gauged supergravities.

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- String theory requires the existence of some branes which lack a standard supergravity description. DFT provides a local description of them when solutions are allowed to depend on winding coordinates.

Chapter 5

- It is possible to formulate a dual theory of DFT that contains the standard duals of the supergravity fields but also extra ones. When reducing to the usual x-space, these extra fields do not propagate new degrees of freedom.

Chapter 6

- If we manage to build a theory of everything, we will have to face the inevitable: What should we do next?.

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