Table of contents String theory 1 HT 2025

lecture 1

1 Classical relativistic string

1.1 Classical relativistic point panticle

12 Clashed Idatistic Idatiustic string

Nambu-Goto action
Polyakov action

- a sommetris
- B Gang Wing

1.3 Classical when tions

1.3.1 EOM & boundary conditions

1.3.2 Considud charges

1.3.3 Solutions of Eum

+ boundary conditions

1.3.4 Satisfying the constraints

1.3.5. The Witt-algebra

a compressed symmetries

ledure 2

lecture 2

lecture 2/3

lecture 3

lecture 3

Lecture 314

lecture 4

lecture 4

lecture 4

lecture 5

quantisation 2 Old covariant 2.1 Introduction Lecture 5/6 2.2 Hilbut space lecture 6 2.3 Constraints, normal ordering

& Vivanoso algora lecture L Lecture L 2.4 Contraints and physical states 25 Mass-shell lecture 6 and level matching conditions Lecture 6/7 2.6 level 1 states & dealing with ghouts 2.7 level 2 states a dealing with ghosts lecture 7 lecture 7 2.9 Null states and D=26 2.3 Physical states of the closed string lecture 7/8

## 3 Interaction lecture 8 Generalities 3.1 Vertex operators: Introduction Lecture 8 3.3 Vertex amontous for the Letur 8/9 opm thing The state vertex correspondence open strings 3.4 lecture 9 Vertex operator: don't string Lecture 9 3.5 lutur 10 3.6 3-point interactions Lecture 10/11 4-point tachyon amplitude 3.7 3.8 Comments on the ormerd nicture Lectur 11/12

4 Strings in ba k gramd fields lecture 12 4.1 Introduction 4.2 Background hield expansion and the West ansmy lecture 12/13 4.3 Including other massless fields lecture 13 44 Space-time effective action lecture 13 5 Compactifications Lecture 14 5.1 Spacetime EFT approach World - sheet porspective (word string) 5.2 leviure H Leutur 15 T- duality (closed strings) 5.3

Open strings and T-duality

5.4

lecture 15

c.2 Stretched strings

63 Final remarks