

QFT

Chapter 49: The Feynman Rules for Majorana Fields

Overview

- Recall that Majorana fields are particles which are their own antiparticle
 - The fields in the lower spinor is just the Hermitian conjugate of the upper spinor
- Are slides really needed for this? We use the LSZ rules to compute correlation functions, work out the amplitudes from there, and then generalize to a set of Feynman Rules.
 - The only real wrinkle is taking advantage of the extra “degrees of freedom” (four LSZ rules for only two independent fields) to write rules in a way that there are no charge conjugation matrices.
- These rules give similar but different results from the Dirac case.

Status

- In analogy with Part I, we've gotten the Feynman Rules down.
 - Next is to consider the remaining cases: massless particles and loops
- We've already talked about symmetries as we've been going along.
- All that remains is beta functions and a new topic, "functional determinants."
 - Then we'll be in Part III!