

1 Introduction: elements of QFT

- 1.1 Canonical dimensions
- 1.2 Higher-dimensional operators and effective field theories

2 From the Fermi Theory to the $SU(2)_L \times U(1)_Y$ gauge theory

- 2.1 The Fermi Theory
- 2.2 Deriving the Fermi Theory integrating out the heavy W field
- 2.3 Elements of Group Theory
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9 Charge-quantization, gauge anomalies, unification

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- 9.2 Unification
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 - 9.2.3 Embedding the SM gauge group into $SU(5)$ (*optional*)

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