

# Renormalized Yukawa

Gustin, Serafin, Simon, Goldstein, and Love  
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Outline:

- (i) Intro.
- (ii) Lightfront Yukawa Model
- (iii) RGPEP
- (iv) Renormalized Yukawa step-by-step
- (v) Block encoding renormalized Yukawa
- (vi) Distribution Functions
- (vii) Conclusion

## I. INTRODUCTION

## II. LIGHTFRONT YUKAWA THEORY

## III. RENORMALIZATION GROUP PROCEDURE FOR EFFECTIVE PARTICLES (RGPEP)

Divergences appering in Hamiltonian quantum field theories come from far off-diagonal matrix elements. These matrix elements arise from interactions between particles of vastly different energy scales. For example, consider the following interaction present in Yukawa theory,  $fb \rightarrow f$ :

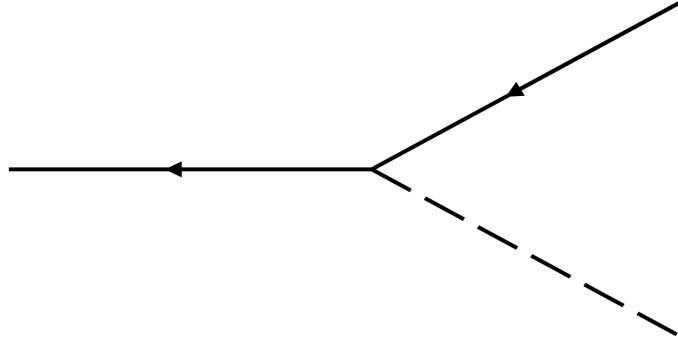


FIG. 1. Interaction