EDM in g2HDM thesis outline

Introduction

- Motivation
  - Unanswered questions in HEP
  - Limitations of the current leading model (SM)
  - What extra good does g2HDM bring?
  - EDM as a precision probe of NP

The theoretical framework

A review of the Standard Model of particle physics

- How deep should this go?

g2HDM

- g2HDM as a natural extension of the SM
  - What differentiates it from other (similar) models?
- The Lagrangian and Yukawa structure
- How various parameters in the theory can contribute to NP

EDM

- EDM theory in the context of particle physics
- The Lagrangian and model-independent approach (Wilson coefficients?)
- Current status of EDM experiments

My analyses

Lepton EDM

- How g2HDM contributes to lepton-EDM
  - One-loop
  - Two-loop Barr-Zee
- Results
  - c.f. our 2022 JHEP paper
- Summary and analysis of the results
  - Maybe mention $g-2$ somewhere?

Quark EDM

- How g2HDM contributes to lepton-EDM
  - One-loop
  - Two-loop Barr-Zee
  - Weinberg
- Results
  - c.f. current CEDM project paper
- Summary and analysis of the results

Conclusion and discussion

- Summary of motivation
- Summary of theoretical framework
- Summary of the analyses
- Future prospects