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To do list for the paper

VBS/multiboson discussion

February, 2022

Plans

- Hard deadline for the white paper is March 15:
 - <https://indico.fnal.gov/event/52536/>
 - Can we make this?
- We agreed last year that for a longer scale beyond Snowmass we would do a journal publication (timescale: summer?)
 - aQGC limits for the $W+W$ - $n\nu$ and $W+W$ - $m\mu$ production targeting different operators (ignoring EFT validity issues for now...). Fully hadronic and leptonic final states?
 - Possibly adding another BSM model (there are couple of candidates that can be done easily)
 - Detector effects/scenarios -> incorporate what we learn from the fully simulated BIB studies for the object performance into delphes and rerun the results
 - Different center of mass scenarios: $3\text{TeV}(1\text{ab}^{-1})?$, $6\text{TeV}(4\text{ab}^{-1})$, $10\text{TeV}(10\text{ab}^{-1})$, $30\text{TeV}(10\text{ab}^{-1})$

To do list

- What can we do for Snowmass white paper (by March 15 deadline)
 - aQGC results for $W+W$ -nunu in hadronic final state for couple of operators?
 - 6TeV($4ab^{-1}$) and 10TeV($10ab^{-1}$)?
- Status of different parts:
 - Samples:
 - 6 TeV SM samples all produced with WHIZARD. AQGC samples produced with Madgraph: /work/arapyan/muon_collider
 - 10 TeV SM samples should be available by the end of this week
 - Selection:
 - Ongoing work with Valencia jets for the fully hadronic final states (presentation by Mayuri)
 - Plotting code to stack the distributions together needs to be done
 - Fitting:
 - The eft-fun framework being exercised by Elham/Alex
 - <https://gitlab.cern.ch/eft-tools/eft-fun>

White paper

- Started the skeleton paper draft on Overleaf and will start document
 - Will add people on overleaf

- Should we increase the frequency of meetings until March 15th?
 - We can meet weekly

1 INTRODUCTION

Anomalous production of W boson pairs at a future
high-energy muon collider

Insert your name and institutional address^a

^aWorld

Abstract

Placeholder

Keywords: Muon Collider, VBS

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1. **Introduction**

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